Казанский федеральный университет

Институт международных отношений, истории и востоковедения
Высшая школа иностранных языков и перевода

ПЕРЕВОД ТЕКСТОВ В ОБЛАСТИ ЭКОЛОГИИ, ПРИРОДОПОЛЬЗОВАНИЯ И УТИЛИЗАЦИИ ОТХОДОВ

Направление подготовки: 45.04.02 Лингвистика

Профиль подготовки: Теория перевода, межкультурная и межъязыковая коммуникация

УЧЕБНО-МЕТОДИЧЕСКОЕ ПОСОБИЕ

Часть I

Казань - 2017

ББК 81. 2Англ
УДК 81'255.2:6
Б 75

Печатается по решению Учебно-методической комиссии
Института международных отношений, истории и востоковедения КФУ
Протокол № 6 от «29» марта 2017 г.
заседания кафедры европейских языков и культур
Протокол № 6 от «20» февраля 2017 г.

Составитель:
доц., канд. педагог. наук **С. С. Боднар**

Рецензенты:
доц.кафедры европейских языков и культур КФУ, канд.филол. наук
Нияз Растамович Латыпов;

доц. кафедры иностранные языки КГЭУ, канд. филол. наук
Гульнара Рашидовна Муллахметова

Перевод текстов в области экологии, природопользования и утилизации отходов. Часть I. Направление подготовки: 45.04.02 Лингвистика. Профиль подготовки: Теория перевода, межкультурная и межъязыковая коммуникация: учеб.-метод. пособие / сост.: С.С**.** Боднар. – Казань: Казан. ун-т, 2017. – 85 с.

Данное учебно-методическое пособие ориентировано на обучение письменному переводу, а также различным видам устного перевода: переводу с листа, последовательному и синхронному переводам. Учебно-методическое пособие предназначено для организации практических занятий и самостоятельной работы магистрантов 2 курса обучения по освоению дисциплины «Перевод текстов в области экологии, природопользования и утилизации отходов», обучающимся по направлению «Лингвистика».

Оглавление

Предисловие

Сегодня проблемы экологии и окружающей среды занимают важное место в нашей жизни, глобальный характер экологических задач, стоящих перед современным обществом, требует специальных знаний и наблюдений во многих отраслях науки, в том числе, и лингвистических исследованиях. Вследствие этого перевод экологических текстов также стал занимать видимое место в переводческой деятельности.

Данное учебно-методическое пособие предназначено для организации практических занятий и самостоятельной работы магистрантов II курса по освоению дисциплины *Перевод текстов в области экологии, природопользования и утилизации отходов*, обучающимся по направлению «Лингвистика».

Целями применения учебно-методического пособия являются расширение словарного запаса магистрантов в области экологии, природопользования, природоохранных мероприятий, утилизации отходов; развитие навыков обработки русскоязычных и иноязычных текстов в производственно-практических целях; развитие навыков ведения дискуссии по различным вопросам и темам, связанным с экологией, природопользованием и утилизацией отходов; развитие навыков устного и письменного перевода вышеуказанной тематики.

Научные тексты по экологии имеют ряд отличительных черт, составляющих их специфику, как в отношении лексического состава, так и в переводческом плане. Целесообразно отметить следующую лексикологическую особенность экологической терминологии: в ее состав входит в основном не столько специальная лексика, сколько общеупотребительная лексика, не относящаяся напрямую к узкому тематико-семантическому полю, но которая входит как в устойчивые, так и в окказиональные терминологические словосочетания. На сегодняшний день, к сожалению, многие лингвисты и переводчики, занимающиеся изучением и переводом данной сферы, констатируют тот факт, что существует проблема трудности перевода экологических текстов и появляются ошибки, которых можно было избежать. Особую сложность при переводе текстов в сфере экологии представляют не только устойчивые словосочетания и термины, сколько обычная лексика, которая связана с этими терминами по смыслу. При неверном понимании может

произойти смещение смысла переводимого текста и, как следствие, создание псевдонаучного текста.

Данное учебно-методическое пособие состоит из шести разделов: *1. Ecology, 2. Fundamental Principles of Ecology, 3. Biodiversity, 4. Biodiversity and Climate Change, 5. Environment and Conservation, 6. Waste Management*, которые имеют одинаковую структуру и состоят из упражнений, которые подразделяются на ознакомительные, тренировочные и контрольные. В ознакомительных упражнениях магистранты знакомятся с новым материалом. Тренировочные упражнения направлены на отработку отдельных навыков и умений определенного вида перевода. Контрольные упражнения позволяют выявить степень усвоения обучаемыми изученного материала. Разделы учебно-методического пособия завершаются глоссарием по экологической тематике.

Магистранты отрабатывают навыки перевода экологических текстов на основе оригинальных англоязычных материалов и профессиональных текстов из российских источников.

В результате освоения дисциплины *Перевод текстов в области экологии, природопользования и утилизации отходов* у магистрантов должны сформироваться следующие профессиональные компетенции: ОПК-9 - готовностью преодолевать влияние стереотипов и осуществлять межкультурный диалог в общей и профессиональной сферах общения; ПК-5 - владением методикой предпереводческого анализа текста, соответствующей точному восприятию исходного высказывания, подготовка к выполнению перевода, включая поиск информации в справочной, специальной литературе и компьютерных сетях; ПК-6 - владением способами достижения эквивалентности в переводе и способностью применять адекватные приемы перевода; ПК-7 - способностью осуществлять письменный перевод с соблюдением норм лексической эквивалентности, соблюдением грамматических, синтаксических и стилистических норм; ПК-8 - владением навыками стилистического редактирования перевода, в том числе художественного; ПК-19 - владением навыками стилистического редактирования перевода, в том числе художественного; ПК-20 - способностью осуществлять устный последовательный перевод и устный перевод с листа с соблюдением норм лексической эквивалентности, грамматических, синтаксических и стилистических норм текста перевода и темпоральных характеристик

исходного текста; ПК-35 - владением методиками экспертной оценки программных продуктов лингвистического профиля.

Процедура оценивания знаний, умений и навыков максимально приближена к условиям будущей профессиональной деятельности магистранта. Сформировавшиеся в ходе освоения дисциплины навыки и умения проверяются и проявляются при выполнении практических заданий и контрольных работ. Поэтому сформированность той или иной компетенции напрямую соотносится с качеством выполняемых работ и заданий.

Методические рекомендации

Дисциплина *Перевод текстов в области экологии, природопользования и утилизации отходов* подразумевает различные методы и формы обучения двустороннему письменному и устному переводу, отвечающие основным требованиям к интенсификации процесса обучения.

Основой данного курса являются практические занятия, цель которых – обучение практическим навыкам письменного и устного перевода текста экологической тематики, а именно:

•навыкам письменного и устного перевода: анализу и моделированию информации;

•определению типа текста и стратегии перевода;

•обучение технике перевода текстов с высокой степенью стандартизации (документы), поиску типовых соответствий;

•переводу текстов средней информационной сложности (медийные тексты); определение границ выбора переводных соответствий; дискурсивная зависимость;

•переводу текстов высокой информационной сложности (научные, научно-популярные), где требуется реконструкция «соотносимостей»;

•технике реферативного перевода.

Занятия делятся на три этапа – этап тренировки, этап практики, этап контроля. Каждый этап имеет свои цели, но, в целом, эти этапы ориентированы на формирование навыков и умений письменного и устного перевода. Для формирования таких умений предлагается соответствующий комплекс упражнений:

- лексические упражнения;

- комплекс упражнений для запоминания и понимания терминов;

- упражнения на развитие навыков ведения дискуссии по различным вопросам и темам, связанным с экологией;

- письменный перевод «с листа», «на слух» (полный, реферативный);

- устный последовательный перевод «на слух», «с листа»;

- устный синхронный перевод (с подготовкой и без подготовки).

Во время аудиторных занятий и самостоятельной работы магистранты:

- вырабатывают навыки межъязыковой и внутриязыковой трансформации текста;

- осуществляют работу с «параллельными» текстами документами и материалами экологического характера с целью анализа лексических, грамматических и стилистических средств выражения, примененных лексических и грамматических трансформаций;

- совершенствуют практические умения и навыки письменного перевода документов, текстов и материалов экологической направленности;

- углубляют и развивают навыки преодоления грамматических и лексических трудностей при переводе;

- практически овладевают письменным и устным переводом звучащего сообщения.

Для совершенствования навыков перевода у обучаемых как под руководством преподавателя так и при их самостоятельной работе рекомендуется привлекать аудионосители с записанными материалами. Они могут использоваться для письменной фиксации оригинального текста и перевода по частям или полностью, с использованием пауз и неоднократным прослушиванием мест, вызывающих наибольшие сложности, а также для отработки синхронного перевода. Подобные упражнения желательно завершать обсуждением предложенных вариантов перевода.

Section 1. Ecology

Упражнение 1. Прочитайте текст вслух.

The Science of Ecology

The word “ecology” comes from the Greek words *oikos*, “household” and *logos*, “study”); therefore “ecology” means the “study of the house hold (of nature)”.

The word “ecology” is often used as a synonym for the natural environment or environmentalism. Likewise “ecologic” or “ecological” is often taken in the sense of environmentally friendly. The Greek philosopher Theophrastus was one of the first people to discuss the relationship between living things and their environments. German zoologist Ernst Haeckel coined the term *oikologie*, defined as the relationship of an animal to both its organic and inorganic environment, particularly those plants and animals with which it comes in contact.

Until the early 20th Century, biologists concentrated on descriptive studies of plants and animals. Charles Darwin’s theory of evolution, for example, developed from his observations while recording the natural history of plants and animals. As human civilization subdued nature, people stopped perceiving it as the enemy. The near extinction of common species like the beaver led to the beginning of the conservation movement. By the 1930s, nature study became part of the curriculum of most schools, but organisms were still viewed in isolation rather than as communities.

Human development degraded the environment because people did not understand their relationship with it; that we have as much impact on our surroundings as they do on us.

No single individual did more to change this than Rachel Carson. Her book, “Silent Spring” (1962), warned how the abuse of chemicals was destroying wildlife while also harming the human environment. This raised massive public interest in nature. By the 1970s ecology, formerly an obscure science became a household word.

The modern definition of ecology is:

The scientific discipline, that is concerned with the relationship between organisms and their past, present and future environments, both living and non-

living. Science, of course, represents a body of knowledge about the world and all its parts. It is also a method for finding new information.

Thus Ecology, or ecological science, is the scientific study of the distribution and abundance of living organisms and how the distribution and abundance are affected by interactions between the organisms and their environment.

The word environment refers to everything around us: the air, the water and the land as well as the plants, animals, and microorganisms that inhabit them.

The environment of an organism includes both physical properties, which can be described as the sum of local abiotic factors such as solar insolation, climate and geology, as well as the other organisms that share its habitat.

Ecology is usually considered a branch of biology, the general science that studies living organisms. Organisms can be studied at many different levels, from proteins and nucleic acids (in biochemistry and molecular biology), to cells (in cellular biology), to individuals (in botany, zoology, and other similar disciplines), and finally at the level of populations, communities, and ecosystems, to the biosphere as a whole; these latter strata are the primary subjects of ecological inquiries. Ecology is a multi-disciplinary science.

Because of its focus on the higher levels of the organization of life on earth and on the interrelations between organisms and their environment, ecology draws heavily on many other branches of science, especially geology and geography, meteorology, pedology, chemistry, and physics. Thus, ecology is considered by some to be a holistic science, one that over-arches older disciplines such as biology which in this view become sub-disciplines contributing to ecological knowledge.

As a scientific discipline, ecology does not dictate what is “right” or “wrong”. However, ecological knowledge such as the quantification of biodiversity and population dynamics has provided a scientific basis for expressing the aims of environmentalism and evaluating its goals and policies. Additionally, a holistic view of nature is stressed in both ecology and environmentalism.

Consider the ways an ecologist might approach studying the life of honeybees:

•The behavioral relationship between individuals of a species is behavioral ecology – for example, the study of the queen bee, and how she relates to the worker bees and the drones.

•The organized activity of a species is community ecology; for example, the activity of bees assures the pollination of flowering plants. Bee hives additionally produce honey which is consumed by still other species, such as bears.

•The relationship between the environment and a species is environmental ecology – for example, the consequences of environmental change on bee activity. Bees may die out due to environmental changes (pollinator decline). The environment simultaneously affects and is a consequence of this activity and is thus intertwined with the survival of the species.

Упражнение 2. Выпишите из текста упражнения 1 ключевые, на ваш взгляд, слова.

Упражнение 3. Подберите русские эквиваленты к следующим словам и словосочетаниям. Выучите их наизусть.

1)one of the major problems; 2)to subdue nature; 3)to come in contact; 4)nucleic acids; 5)therefore; 6)to define; 7)descriptive studies of plants; 8)to have impact on; 9)observations; 10)abuse of chemicals; 11)to destroy wildlife; 12)cell; 13)to harm the human environment;14)pedology; 15)to raise public interest in; 16)distribution and abundance of living organisms; 17)to inhabit; 18)abiotic; 19)solar insolation; 20)drones; 21)pollination; 22)to consume; 23)habitat; 24)consequences of environmental change; 25)to intertwine; 26)survival; 27)to be worried about something.

Упражнение 4. Подберите из текста английские эквиваленты к следующим словам и словосочетаниям. Выучите их наизусть.

1)глобальное потепление; 2)физические свойства; 3)почвоведение; 4)освещение лучами солнца (инсоляция); 5)трутень; 6)покорять природу; 7)распределение организмов; 8)последствия изменений; 9)быть обеспокоенным чем-либо; 10)нуклеиновая кислота; 11)ввести термин; 12)естественная среда; 13)насущный вопрос; 14)опыление; 15)вид; 16)численность организмов; 17)злоупотребление химикатами; 18)цветение; 19)принимать за врага; 20)наблюдение.

Упражнение 5. Опираясь на ваши выписанные слова, и слова из упражнений 3 и 4 передайте содержание текста из упражнения 1 на английском языке как можно ближе к оригиналу.

Упражнение 6. Переведите с листа на русский язык следующий текст.

The term “ecology” was coined by the German zoologist, Ernst Haeckel, in 1866 to describe the «economies» of living forms. The theoretical practice of ecology consists of the construction of models of the interaction of living systems with their environment (including other living systems). These models are then tested in the laboratory and the field. (Field-work in ecology also consists of data collection that need not be inspired by any theory.)

Theory in ecology consists of principles used to construct models. Unlike evolutionary theory, ecology has no generally accepted global principles.

Contemporary ecology consists of a patchwork of sub-disciplines including population ecology, community ecology, conservation ecology, ecosystem ecology, metapopulation ecology, metacommunity ecology, spatial ecology, landscape ecology, physiological ecology, evolutionary ecology, functional ecology, and behavioral ecology. What is common to all these fields is the view that: (i) different biota interact in ways that can be described with sufficient precision and generality to permit their scientific study; and (ii) ecological interactions set the stage for evolution to occur primarily because they provide the external component of an entity’s fitness. The latter aspect makes ecology a central part of biology. As van Valen once put it: “Evolution is the control of development by ecology”. However, the creation of a unified theoretical framework for evolution and ecology remains the task for the future and will be of no further concern in this entry.

Упражнение 7. Переведите письменно со словарем на английский язык следующий отрывок.

Термин «экология» (от греч. *oikos* – жилище, место обитания и *logos* – наука) предложил Э. Геккель в 1866 г. для обозначения биологической науки, изучающей взаимоотношения животных с органической и неорганической средами. С того времени представление о содержании экологии претерпело ряд уточнений, конкретизаций.

Однако до сих пор нет достаточно чёткого и строгого определения экологии, и все ещё идут споры о том, что такое экология, следует ли её рассматривать как единую науку или же экология растений и экология животных – самостоятельные дисциплины. Не решён вопрос, относится ли биоценология к экологии или это обособленная область науки. Не случайно почти одновременно появляются руководства по экологии, написанные с принципиально разных позиций. В одних экология трактуется как современная естественная история, в других – как учение о структуре природы, в котором конкретные виды рассматриваются лишь как средства трансформации вещества и энергии в биосистемах, в-третьих – как учение о популяции и т.д.

Нет необходимости останавливаться на всех существующих точках зрения относительно предмета и содержания экологии. Важно лишь отметить, что на современном этапе развития экологических представлений все более чётко вырисовывается её суть. Экология – это наука, исследующая закономерности жизнедеятельности организмов (в любых её проявлениях, на всех уровнях интеграции) в их естественной среде обитания с учётом изменений, вносимых в среду деятельностью человека. Из этой формулировки можно сделать вывод, что все исследования, изучающие жизнь животных и растений в естественных условиях, открывающие законы, по которым организмы объединяются в биологические системы, и устанавливающие роль отдельных видов в жизни биосферы, относятся к экологическим.

Предметом исследования экологии являются биологические макросистемы (популяции, биоценозы, экосистемы) и их динамика во времени и пространстве. Из содержания и предмета исследований экологии вытекают и её основные задачи, которые могут быть сведены к из учению динамики популяций, к учению о биогеоценозах и их системах.

Структура биоценозов, на уровне формирования которых, как было отмечено, происходит освоение среды, способствует наиболее экономичному и полному использованию жизненных ресурсов. Поэтому главная теоретическая и практическая задача экологии заключается в том, чтобы вскрыть законы этих процессов и научиться управлять ими в условиях неизбежной индустриализации и урбанизации нашей планеты.

Упражнение 8. Запишите на слух следующий отрывок на английском языке, переведите его на русский язык.

Sisters stood densely-packed and silent, their battle-glands flaring and weapons at the ready. The smell of fear trickled up here and there, but every sister pointed her antennae forward and none gave way to it. Flora waited in the vanguard as the Thistle pumped out wave after wave of war scent. But the orchard was silent.

The bees waited. Murmurs began. Perhaps the wasps had gone? Wings were crushed, the heat was rising and a tide of irritation seeped through the crowd. And then a wave of acid air rushed in and every sister's feet felt the heavy alien vibration as a great wasp settled on the landing board. There was the sound of a hard scuffle and then a loud crack. A Thistle guard screamed, then another. Standing right at the front Flora saw it all.

The wasp was a huge female with bands of acid yellow and glossy black. Her head was as large as three sisters' and she used her slashing claws to catch the guards one by one, killing each one with a snap of her heavy jaws. Then she flattened her long antennae, crouched down and peered inside the hive.

Spasms of fear shot through all the bees at the sight of her glittering, malevolent eyes, but not one of them moved. Flora stared back at the wasp and felt her dagger slide out. The wasp smiled at her.

Упражнение 9. Выполните тесты, обсудите их результаты с вашими коллегами.

Test 1. How environmentally aware are you?

1. What does your family do with empty bottles?

A) Take them to a recycling bin

B) Return them to the supermarket

C) Throw them in the rubbish bin

2. When you buy one or two items at the supermarket, you

A) Take a plastic carrier bag.

B) Reuse an old plastic carrier bag.

C) Use your own bag.

3. How often do you choose products which contain recycled materials?

A) Always

B) never

C) sometimes

4. If you were asked to contribute to a Save the Animals project, you would

A) give generously.

B) give a small amount.

C) refuse to give anything.

5. A local beach has been polluted with oil. You

A) donate money for the clean-up project.

B) do nothing.

C) volunteer to help with the clean-up project.

6. You eat a chocolate bar in the street. What do you do with the wrapper?

A) drop it on the pavement

B) put it in a litter bin

C) save it for recycling

7. When you buy paper products, you

A) buy whatever is cheapest.

B) try to purchase recycled paper.

C) purchase recycled paper as long as it doesn't cost more.

8. When you clean your teeth, you

A) Turn the tap on only when you need water.

B) leave the tap running until you have finished.

C) only use one glass of water.

Key

1. A 3 B 2 C 0

2. A 0 B 2 C 3

3. A 3 B 0 C 2

4. A 3 B 2 C 0

5. A 2 B 0 C 3

6. A 0 B 2 C 3

7. A 0 B 3 C 2

8. A 2 B 0 C 3

18-24

Keep up the good work! You are doing your part to protect the environment.

13-17

There is some room for improvement. Change your habits and soon you will be green.

0-12

You are part of the problem. You should try to become part of the solution.

Test 2. How Green Are You?

1. If you had a lot of old newspapers and empty bottles, would you ...

a) leave them on the pavement?

b) put them in a rubbish bin?

c) recycle them?

2. If somebody offered to give you one of the following as a gift, which would you choose?

a) a big, fast car

b) a motorbike

c) a bicycle

3. If you were in the middle of a city and wanted to go somewhere one or two kilometres away, would you...

a) take a taxi?

b) take a bus?

c) walk/cycle?

4. If you had a picnic on the beach, what would I you do with your rubbish? Would you ...

a) leave your rubbish on the beach?

b) put your rubbish in the first bin you found?

c) take your rubbish home?

5 If you had 1000$ to spend, would you ...

a) buy a fur coat?

b) go on a safari?

c) adopt a dolphin?

Key

mostly a's: You're not very green, are you? Please look after our world before it's too late!

mostly b's: You're trying to be more green but you don't always get it right. Learn more about the environment and think before.

mostly c's: Well done! You're really green! We need more people like you to help us save our environment!

Упражнение 10. Переведите на слух следующие отрывки.

1. В центре внимания экологии — то, что непосредственно связывает организм с окружающей средой, позволяя жить в тех или иных условиях. Экологов интересует, например, что потребляет организм и что выделяет, как быстро он растет, в каком возрасте приступает к размножению, сколько потомков производит на свет, и какова вероятность у этих

потомков дожить до определенного возраста. Объектами экологии чаще всего являются не отдельно взятые организмы, а популяции, биоценозы, а также экосистемы. Примерами экосистем могут быть озеро, море, лесной массив, небольшая лужа или даже гниющий ствол дерева. Как самую большую экосистему можно рассматривать и всю биосферу.

2. Современная экология — это быстро развивающаяся наука, характеризующаяся своим кругом проблем, своей теорией и своей методологией. Сложная структура экологии определяется тем, что объекты ее относятся к очень разным уровням организации: от целой биосферы и крупных экосистем до популяций, причем популяция нередко рассматривается как совокупность отдельных особей. Масштабы пространства и времени, в которых происходят изменения этих объектов, и которые должны быть охвачены исследованиями, также варьируют чрезвычайно широко: от тысяч километров до метров и сантиметров, от тысячелетий до недель и суток.

3. Защита окружающей среды - совокупность научных, правовых и технических мероприятий, направленных на рациональное использование, воспроизводство и сохранение природных ресурсов в интересах людей, на обеспечение биологического равновесия в природе. Экологические знания должны служить основой рационального природопользования. На их основе базируется создание и развитие сети охраняемых территорий: заказников, заповедников и национальных парков, а также охрана отдельных памятников природы. Рациональное использование природных ресурсов является основой устойчивого развития человечества.

4. Выброс в атмосферу всё большего количества парниковых газов не оставляет надежд на то, что процесс глобального потепления в ближайшее время приостановится или хотя бы замедлится. Это обстоятельство нельзя не учитывать, хотя до самого последнего времени основным фактором, определяющим исчезновение видов, было (да и сейчас остается) уничтожение человеком их природных местообитаний (сведение лесов, превращение природных ландшафтов в сельскохозяйственные угодья, прокладка дорог и т. п.). Тем не менее значимость климатической составляющей не только не ослабевает, а наоборот — усиливается. Очевидно, что оценка влияния меняющегося климата на состояние биоразнообразия полна всевозможных неопределенностей, устранение

которых требует знания многих параметров, характеризующих как среду обитания, так и сами организмы.

5. Очевидно, что в условиях меняющегося климата необходимо иметь более гибкую стратегию охраняемых территорий. Важно, к примеру, создание буферных зон, снятие барьеров на пути миграций животных, установление коридоров и мостов (в прямом и переносном смысле), облегчающих передвижения животных и освоение ими новых территорий. В некоторых случаях охрана отдельных видов требует интенсивного вмешательства — от облегчения миграций и переноса организмов до разведения исчезающих видов в зоопарках и ботанических садах. Наука об охране природы должна перейти от предсказаний возможных изменений к разработке эффективной системы мер по противостоянию растущей угрозе биоразнообразию.

Упражнение 11. Переведите письменно на английский язык следующее сообщение.

2017 год объявлен Годом экологии

В 2017 году пройдет Год экологии и Год особо охраняемых природных территорий. Об этом сообщается на официальном сайте Минприроды России.

Напомним, 5 января 2016 года Президент РФ Владимир Путин подписал Указ о проведении в 2017 году в Российской Федерации Года экологии. Его проведение намечено в целях привлечения внимания общества к вопросам экологического развития России, сохранения биологического разнообразия и обеспечения экологической безопасности. Решено образовать организационный комитет по проведению Года экологии, Правительству РФ поручено обеспечить разработку и утверждение плана основных мероприятий по его проведению, а региональным властям рекомендовано осуществлять необходимые мероприятия в рамках Года экологии.

Год экологии будет организован по двум основным направлениям: развитие заповедной системы и экология в целом.

«Для «экологических двоечников» год станет временем диктатуры природоохранного законодательства. Для ответственных компаний он принесет дополнительные возможности и стимулы для перехода на более

эффективную модель управления», – подчеркнул глава Минприроды России Сергей Донской.

Отметим, 2017 год также объявлен Годом особо охраняемых природных территорий (Указ Президента РФ от 1 августа 2015 г. № 392 «О проведении в Российской Федерации Года особо охраняемых природных территорий»). Правительством РФ уже утвержден план основных мероприятий по его проведению (распоряжение Правительства РФ от 26 декабря 2015 г. № 2720-р). В частности, запланировано проведение 168 мероприятий, направленных на развитие идей заповедного дела, их популяризацию и усиление поддержки отечественной системы особо охраняемых природных территорий (ООПТ) в обществе. Например, предполагается провести Всероссийский (детский и молодежный) слет друзей заповедных островов, Всероссийское совещание по вопросам эколого-просветительской деятельности на ООПТ, Всероссийское совещание по вопросам охраны крупных млекопитающих на ООПТ, Всероссийский форум по ООПТ.

Кроме того, Минприроды России намерено в текущем году создать пять новых охраняемых территорий (заказники на Соловецком архипелаге и на Новосибирских островах, национальные парки «Ладожские шхеры» в Карелии и «Сенгилеевские горы» в Ульяновской области, заповедник «Васюганский» в Томской и Новосибирской областях). Напомним, в настоящее время в систему федеральных ООПТ входит 103 государственных природных заповедника, 49 национальных парков и 64 государственных природных заказника.

Упражнение 12. Ответьте на вопросы по содержанию текстов данного урока.

1. What does the word ecology come from?

2. Have people always understood the importance of their impact on the nature? Prove your opinion.

3. What does the word environment refer to?

4. Is ecology a science? Why?

5. What does ecology study?

6. Which branches of science is ecology connected with?

Section 2. Fundamental Principles of Ecology

Упражнение 1. Переведите с листа на русский язык следующий текст.

Biosphere

For modern ecologists, ecology can be studied at several levels: population level (individuals of the same species), biocoenosis level (or community of species), ecosystem level, and biosphere level.

The outer layer of the planet Earth can be divided into several compartments: the hydrosphere (or sphere of water), the lithosphere (or sphere of soils and rocks), and the atmosphere (or sphere of the air). The biosphere (or sphere of life), sometimes described as «the fourth envelope», is all living matter on the planet or that portion of the planet occupied by life. It reaches well into the other three spheres, although there are no permanent inhabitants of the atmosphere. Relative to the volume of the Earth, the biosphere is only the very thin surface layer which extends from 11,000 meters below sea level to 15,000 meters above.

It is thought that life first developed in the hydrosphere, at shallow depths, in the photic zone. Although recently a competing theory has emerged, that life originated around hydrothermal vents in the deeper ocean. Multicellular organisms then appeared and colonized benthic zones. Photosynthetic organisms gradually produced the chemically unstable oxygen-rich atmosphere that characterizes our planet. Terrestrial life developed later, after the ozone layer protecting living beings from UV rays had been formed. Diversification of terrestrial species is thought to be increased by the continents drifting apart, or alternately, colliding. Biodiversity is expressed at the ecological level (ecosystem), population level (intraspecific diversity), species level (specific diversity), and genetic level. Recently technology has allowed the discovery of the deep ocean vent communities. This remarkable ecological system is not dependent on sunlight but bacteria, utilizing the chemistry of the hot volcanic vents, are at the base of its food chain.

The biosphere contains great quantities of elements such as carbon, nitrogen and oxygen. Other elements, such as phosphorus, calcium, and potassium, are also essential to life, yet are present in smaller amounts. At the ecosystem and biosphere levels, there is a continual recycling of all these elements, which alternate between the mineral and organic states.

While there is a slight input of geothermal energy, the bulk of the functioning of the ecosystem is based on the input of solar energy. Plants and photosynthetic microorganisms convert light into chemical energy by the process of photosynthesis, which creates glucose (a simple sugar) and releases free oxygen. Glucose thus becomes the secondary energy source which drives the ecosystem. Some of this glucose is used directly by other organisms for energy. Other sugar molecules can be converted to other molecules such as amino acids. Plants use some of this sugar, concentrated in nectar to entice pollinators to aid them in reproduction.

Cellular respiration is the process by which organisms (like mammals) break the glucose back down into its constituents, water and carbon dioxide, thus regainnig the stored energy the sun originally gave to the plants.

The proportion of photosynthetic activity of plants and other photosynthesizers to the respiration of other organisms determines the specific composition of the Earth's atmosphere, particularly its oxygen level. Global air currents mix the atmosphere and maintain nearly the same balance of elements in areas of intense biological activity and areas of slight biological activity.

Water is also exchanged between the hydrosphere, lithosphere, atmosphere and biosphere in regular cycles. The oceans are large tanks, which store water, ensure thermal and climatic stability, as well as the transport of chemical elements thanks to large oceanic currents.

For a better understanding of how the biosphere works, and various dysfunctions related to human activity, American scientists simulated the biosphere in a small-scale model, called Biosphere II.

Упражнение 2. Переведите на русский язык следующие слова и словосочетания и выучите их наизусть.

1)outer layer; 2)living matter; 3)permanent inhabitants; 4)to extend; 5)photic zone; 6)shallow depths; 7)benthic zone; 8)terrestrial life; 9)to drift apart; 10)vent; 11)amino acids; 12)solar energy; 13)to alternate; 14)cellular respiration; 15)to regain; 16)global air currents; 17)to maintain; 18)mammal; 19)intense biological activity; 20)carbon dioxide; 21)to release; 22)secondary energy source; 23)to entice; 24)phosphorus; 25)input; 26)to reach well into.

Упражнение 3. Подберите из текста английские эквиваленты к следующим словам и словосочетаниям.

1)глобальное потепление; 2)физические свойства; 3)почвоведение; 4)освещение лучами солнца (инсоляция); 5)трутень; 6)покорять природу; 7)распределение организмов; 8)последствия изменений; 9)быть обеспокоенным чем-либо; 10)нуклеиновая кислота; 11)живая материя; 12)приманивать; 13)углекислый газ; 14)глюкоза; 15)калий; 16)воздушный поток; 17)относительно размера земли; 18)выделять; 19)многоклеточный; 20)обеспечивать стабильность.

Упражнение 4. Переведите с листа на русский язык следующий отрывок, вставляя пропущенные слова.

The first step to an understanding the interrelationship of living organisms and their nonliving ..... is to begin with the sun. From it comes most of the ..... on earth. But, it is largely unavailable to animals directly. It must be transmitted to them by green vegetation through a process known as ..... .

In this process the ..... is transferred through a substance in the vegetation called chlorophyll (from Greek, chloros, green, and phyllos, leaf) in the presence of water to become ..... and food sugar. Now, animals can receive their energy by eating ..... or other animals (who have eaten plants at some stage). As plants and animals decay, with the help of bacteria and fungi, they release chemicals in the earth, helping to feed plants.

This circulation makes the earth's basic substances – ..... – and others move between the earth's main stratums: air (the .....), water (the .....), soil and rocks (the .....) and living organisms (the .....).

(oxygen, biosphere, energy, free oxygen, environment, carbon, hydrosphere, water, solar energy, plants, lithosphere, photosynthesis, nitrogen, atmosphere)

Упражнение 5. Переведите письменно на английский язык следующий текст.

Содержание понятия «биосфера» не всегда было однозначным. Первоначально биосферами называли гипотетические глобулы, якобы составляющие живую основу всех организмов. Такое понимание продержалось во Франции до середины XVIII века.

Существенно иное представление о биосфере сформулировал в 1875 г. австрийский геолог Э. Зюсс. В монографии «Происхождение Альп» он говорит о «самостоятельной биосфере» как об особой оболочке Земли, образованной живыми организмами. В заключительной главе большого трехтомного труда «Лик Земли» (1909) этот автор пишет, что понятие «биосфера» возникло как следствие идей Ж. Ламарка и Ч. Дарвина о единстве органического мира.

С работ Зюсса датируется начало биологического представления о биосфере, как о совокупности организмов, населяющих Землю, как о живой оболочке планеты. Представление Зюсса о биосфере как об особой оболочке земли использовал и В.И.Вернадский (1926), вложив в него, однако, существенно иное, биогеохимическое, содержание. Биосфера, по Вернадскому, – область распространения жизни, включающая наряду с организмами и среду их обитания.

Разработка биогеохимического представления о биосфере была тесно связана с практической деятельностью В.И. Вернадского в Комиссии Академии наук по изучению естественных производственных сил России (начало 1915 г.).

В настоящее время оба понимания биосферы, по Зюссу и по Вернадскому, существуют. Н.В. Тимофеев-Ресовский предлагает говорить о биосфере в узком и широком понимании. Представляется более целесообразным употреблять это понятие, вкладывая в него смысл, при данный Вернадским, – область распространения жизни, используя для биосферы в «узком смысле» выражения: «совокупность организмов», «пленка жизни», «живой покров Земли», «биота», «биос».

Верхняя граница биосферы, по Вернадскому (1965), проходит на вы соте 15-20 км, охватывая всю тропосферу и нижнюю часть стратосферы: озон находится у полюсов в слое 8-30 км, в тропиках – 15-35 км. Снизу биосфера ограничена отложениями на дне океанов (до глубины свыше 10 км) и глубиной проникновения в недра Земли организмов и воды в жидком состоянии. Подстилающая литосфера, верхняя стратосфера, ионосфера и космическое пространство служат биосфере средой. Основной энергетический источник, обеспечивающий функционирование биосферы, – лучистая энергия Солнца.

Таким образом, биосфера – это особая термодинамическая открытая оболочка Земли, вещество, энергетика и организация которой и обусловливаются взаимодействием её биотического и абиотического компонентов. Она, следовательно, включает совокупность организмов и их остатки, а также части атмосферы, гидросферы и литосферы, населённые организмами и изменяемые их деятельностью.

Важнейшей функцией биосферы является регулярное, возрастающее во времени воссоздание живого вещества по численности, весу и количеству аккумулированной и удерживаемой энергии. Человек воспринимает эту функцию как биологическую продуктивность биосферы, её частей (океан, почвы, пресные воды) или её отдельных экосистем и биогеоценозов (дельты, луга, тайга, поля зерновых и т.д.).

Упражнение 6. Прочитайте текст про себя.

The term «Biosphere» was coined by Russian scientist Vladimir Vernadsky in the 1929. The biosphere is the life zone of the Earth and includes all living organisms, including man, and all organic matter that has not yet decomposed. Life evolved on earth during its early history between 4,5 and 3,8 billion years ago and the biosphere readily distinguishes our planet from all others in the solar system. The chemical reactions of life (e.g., photosynthesis-respiration, carbonate precipitation, etc.) have also imparted a strong signal on the chemical composition of the atmosphere, transforming the atmosphere from reducing conditions to and oxidizing environment with free oxygen. The biosphere is structured into a hierarchy known as the food chain whereby all life is dependent upon the first tier (i.e. mainly the primary producers that are capable of photosynthesis).

Energy and mass are transferred from one level of the food chain to the next with an efficiency of about 10 %. All organisms are intrinsically linked to their physical environment and the relationship between an organism and its environment is the study of ecology. The biosphere can be divided into distinct ecosystems that represent the interactions between a group of organisms forming a trophic pyramid and the environment or habitat in which they live.

Links to other components:

Atmosphere: Life processes involve a vast number of chemical reactions some of which either extract or emit gases from and to the atmosphere. For example, photosynthesis consumes carbon dioxide and produces oxygen

whereas respiration does the opposite. Other examples of biogenic gases in the atmosphere include methane, dimethylsulfide (DMS), nitrogen, nitrous oxide, ammonia, etc.).

Hydrosphere: Water is essential for all living organisms on the Earth and has played a key role in the evolution and sustenance of life on our planet. The biosphere as we know it would not exist without liquid water (for example, consider Mars). Water is also important for transport the soluble nutrients (phosphate and nitrate) that are needed for plant growth, and for transporting the waste products of life's chemical reactions.

Geosphere: The geosphere and biosphere are intimately connected through soils, which consist of a mixture of air, mineral matter, organic matter, and water. In fact, one could consider soil as composed of all four spheres (atmosphere, geosphere, biosphere, and hydrosphere). Plant activity such as root growth and generation of organic acids are also important for the mechanical and chemical breakdown (weathering) of the geosphere.

Anthrosphere: Human population poses a threat to the biosphere by habitat destruction, especially by the destruction of tropical rainforests (deforestation). This process is driving thousands of species each year to extinction and reducing biological diversity.

Упражнение 7. Передайте содержание текста на английском языке, попросив ваших коллег поочередно перевести предложенный пересказ на русский язык по предложениям.

Упражнение 8. Прослушайте и заполните пробелы в тексте.

The truth about global warming

The graph helps us to distinguish between variations in the climate due to _____ causes and those variations that are induced by human _____.

The climate is naturally variable. Occasionally there is a downward trend that is associated with a volcano going off. Then we get to a period, from about 1910, where you can start to see an upward trend, a warming of the climate: _____ _____.

Up to this point, you could argue that climate variation can be explained by natural _____. That is no longer the case as you get to the latter part of the 20th century. From about 1970 onwards, you can see the red curve and the

green curve beginning to diverge. The yellow curve includes human factors: in particular the _____ effect, which is mostly caused by carbon dioxide from _____ fuel burning.

There seems little doubt that this steep rise in temperature is due to human activity. Without the action of _____ _____, there would have been far less _____ change since the 1970's.

Упражнение 9. Передайте текст упражнения 8 на русском языке, опираясь на свои записи. Попросите вашего коллегу перевести ваш пересказ на английский язык на слух по предложению без опоры на текст или его записи.

Упражнение 10. Переведите на слух следующий текст с английского языка на русский.

The greenhouse effect is one of several factors that affect the temperature of the Earth. It was discovered by Joseph Fourier in 1824, with the first reliable experiments conducted by John Tyndall in the year 1858 and reported for the first time, quantitatively by Svante Arrhenius in 1896. Greenhouse gases, which include water vapour, carbon dioxide and methane, warm the atmosphere by efficiently absorbing thermal infrared radiation emitted by the Earth surface, by the atmosphere itself, and by clouds. Methane is produced when vegetation is burned, digested or rotted with no oxygen present. Garbage dumps, rice paddies, and grazing cows and other livestock release lots of methane. Nitrous oxide can be found naturally in the environment but human activities are increasing the amounts. Nitrous oxide is released when chemical fertilizers and manure are used in agriculture. Halocarbons are a family of chemicals that include CFCs (which also damage the ozone layer), and other human-made chemicals that contain chlorine and fluorine. The most poisonous and the abundantly released gas is carbon dioxide. Billions of tones of carbon dioxide are burnt into the atmosphere every year. Carbon dioxide is the gas that is exhaled by everyone in this Earth and it has the properties to absorb infrared radiation, which is the heat radiated away from a warm object. The Earth cools off at night by radiating the heat back into the space, which it gets from the sun during the day, in the form of infrared radiation. With carbon dioxide present in the air, it will absorb some of the radiation and limit its exit into space. The presence of increased carbon in the atmosphere has made the oceans more acidic, killing many sea creatures and endangering the general health of the oceans all over the world.

Упражнение 11. Переведите с листа следующий текст с русского языка на английский.

Антропогенное глобальное потепление, как полагают (is believed to be), является результатом “усиленного парникового эффекта”, главным образом, из-за увеличения концентрации парниковых газов в атмосфере благодаря человеческому вмешательству и изменений в использовании земли. В нашей солнечной системе на Марсе, Венере и Титане также проявляются соответствующие их среде парниковые эффекты. Кроме того, у Титана есть анти-парниковый эффект, и Плутон демонстрирует поведение, подобное анти-парниковому эффекту.

Из-за блокирования опасных ультрафиолетовых лучей и поддержания поверхности Земли достаточно теплой для живых организмов, озон, как полагают (is considered to be), является очень важным остаточным газом.

Теперь же обнаружено, что озоновый слой, защищающий землю, утончается и постоянно уменьшается.

Сегодня используются сложные компьютерные модели, для того чтобы получить доступ ко многим важным факторам, которые влияют на климат Земли.

Упражнение 12. Ответьте на вопросы по содержанию текстов данного урока.

1. Why is the biosphere described sometimes as “the fourth envelope”?

2. Where did life first develop? How?

3. What elements does the biosphere contain?

4. How is light converted into glucose and other sugar molecules?

5. What determines the specific composition of the Earth’s atmosphere?

6. How important are the oceans for water cycling?

7. What is the origin of the word “biosphere” and its brief history.

Section 3. Biodiversity

Упражнение 1. Прочитайте текст вслух.

Biodiversity is a word that describes the variety of living things. “Bio” (from a Greek word) refers to living and “diversity” refers to differences and variety. Living organisms express their diversity in hundreds of different ways – both external and visible and internal and invisible.

There are 3 kinds of biodiversity

1. Variety of genes

Poodles, beagles, and rottweilers are all dogs – but they’re not the same because their genes are different. It’s the difference in our genes that makes us all different.

2. Variety among species

Scientists group living things into distinct kinds of species. For example, dogs, dragonflies, and daisies are all different species.

3. Variety of ecosystems

Coral reefs, wetlands, and tropical rain forests are all ecosystems. Each one is different, with its own unique species living in it. Genes, species, and ecosystems working together make up our planet’s biodiversity.

There is genetic diversity within a species, which results in the differences between you and your brothers and sisters and cousins and grandparents even though we all members of the human race – the species Homo Sapiens. Genetic diversity means that an Ethiopian looks different from a Scandinavian or a Japanese person and that inherited diseases run in some families, but not in others. Genetic diversity is the reason why Siamese cats have different body shape and hair colouring from the black and white moggy next door. There is evolutionary diversity, which has given rise to all the different species of animals and plants on this Earth and is genetic diversity on a wider scale. This is also known as species diversity.

Each species is adapted – and sometimes highly specialised – to survive in a particular environment or range of environments. Only the human species, through cultural and racial diversity and technology, seems to have adapted itself to survive in almost every environment on the Earth.

Ecologists call the role a species plays in its environment a «niche» – like an actor playing the villain, the hero or the comic, in a play. The role may be that of a plant colonizing bare ground, a caterpillar consuming that plant or a wasp preying on the caterpillar. Because there are so many possible niches in all the vast inhabitable areas of the Earth, millions of species have evolved to fill them. Hence the wonderful ecosystem diversity of the planet.

Adaptation by different species to widely separated, but similar types of environments and niches, has led to convergent evolution, where organisms have a similar life style and appearance but are not related. The diversity is there despite superficial similarities.

Lastly, there is cultural diversity, which people will argue is not part of biodiversity. But if you think of it as being the result of evolution and adaptation then it surely is. It applies mostly to us – Homo Sapiens – and is something learned from family, tribal and national groups. Cultural diversity helps the survival process by binding groups together and passing on traditions which help people live in their local environment.

In 1992 the world's government leaders met at a convention in Rio de Janeiro, in Brazil – the country that holds the largest, but fast disappearing, rainforest. The purpose of the convention was to discuss the growing concern, amongst scientists of all nations, about the rapid extinction of the world's non-human fauna and flora, the depletion of the world's resources and the causes and effects of global warming. Various decisions were made, out of which arose the UK's Local Agenda 21 and the Biodiversity Action Plan.

In July 1997, the World's leaders met again, to look at where they had got in terms of reducing the so-called Greenhouse Gases which cause global warming. Not very far, it seems.

How can we study the biodiversity around us? One way is to keep a Nature Diary.

Many of the world's different plants and animals are under severe threat of extinction. Many species are lost already.

A species is said to be extinct when it has not been seen for over 50 years. Dinosaurs became extinct 65 million years ago but, in the last 50 years, more animals and plants have become extinct, because of hunting and loss of habitat. Globally, many hundreds of species will face extinction in a very few years

without intensive conservation, education and environmental management and policy-making.

Exotic species are animal and plant species that find themselves outside their native habitat. Scientists have recorded 1,75 million species on our planet and estimate another 5 to 100 million unrecorded species! The educated guess stands at 12,5 million.

These species cause changes to the ecosystem and sometimes destroy other species native to that ecosystem. For example, zebra mussels came from Europe to the Great Lakes of North America in the ballast of ships. They spread like a plague in the waterways of the continent, attaching themselves to existing mussels and killing them. Breeding quickly, they clog up hydro-electric generators, encrust the hulls of boats and erode pipes in water treatment plants.

Living organisms are made up of cells. Scientists have found a way to copy, or clone, the information, or genes found in cells to make new plants and animals. But no one knows if it is totally safe to take genes from one species and add them another. Well-known examples of genetic manipulation include Dolly the sheep – the first cloned mammal, and adding the genes of a toad or a spider to vegetables.

Упражнение 2. Передайте на русском языке основное содержание текста упражнения 1.

Упражнение 3. Переведите на русский язык следующие слова и словосочетания и выучите их наизусть.

1)biodiversity; 2)inherited diseases; 3)to consume; 4)rapid extinction; 5)plague; 6)cell; 7)variety; 8)hair colouring; 9)to prey; 10)to destroy; 11)to estimate; 12)toad; 13)genetic diversity; 14)caterpillar; 15)rainforest; 16)mussel; 17)to reduce.

Упражнение 4. Переведите устно с листа следующие предложения.

1. Evolutionary diversity has given rise to all the different species of animals and plants on Earth.

2. Because there are so many possible niches in all the vast inhabitable areas of the Earth, millions of species have evolved to fill them.

3. Living organisms express their diversity in hundreds of different ways – both external or visible and internal or invisible.

4. Many of the world’s different plants and animals are under severe threat of extinction.

5. Cultural diversity helps the survival process by binding groups together and passing on traditions which help people live in their local environment.

6. Genetic diversity within a species results in the differences between you and your brothers and sisters and cousins and grandparents even though we all members of the human race.

7. Living organisms are made up of cells.

8. Only the human species, through cultural and racial diversity and technology, seems to have adapted itself to survive in almost every environment on Earth.

Упражнение 5. Переведите на слух на русский язык по абзацам следующий текст.

Biodiversity or Biological Diversity is the sum of all the different species of animals, plants, fungi, and microbial organisms living on the Earth and the variety of habitats in which they live. Scientists estimate that upwards of 10 million and some suggest more than 100 million of different species inhabit the Earth. Each species is adapted to its unique niche in the environment, from the peaks of mountains to the depths of deep-sea hydrothermal vents, and from polar ice caps to tropical rain forests.

Biodiversity underlies everything from food production to medical research. Humans of the world overuse at least 40,000 species of plants and animals on a daily basis. Many people around the world still depend on wild species for some or all of their food, shelter, and clothing. All of our domesticated plants and animals came from wild-living ancestral species. Close to 40 percent of the pharmaceuticals used in the United States are either based on or synthesized from natural compounds found in plants, animals, or microorganisms.

The array of living organisms found in a particular environment together with the physical and environmental factors that affect them is called an ecosystem. Healthy ecosystems are vital to life: they regulate many of the chemical and climatic systems that make available clean air and water and plentiful oxygen. Forests, for example, regulate the amount of carbon dioxide in the air, produce oxygen as a byproduct of photosynthesis (the process by which

plants convert energy from sunlight into carbohydrate energy), and control rainfall and soil erosion. Ecosystems, in turn, depend on the continued health and vitality of the individual organisms that compose them. Removing just one species from an ecosystem can prevent the ecosystem from operating optimally.

Perhaps the greatest value of biodiversity is yet unknown. Scientists have discovered and named only 1. 75 million species and less than 20 percent of those are estimated to exist. And of those identified, only a fraction has been examined for potential medicinal, agricultural, or industrial value. Much of the Earth's great biodiversity is rapidly disappearing, even before we know what is missing. Most biologists agree that life on Earth is now faced with the most severe extinction episode since the event that drove the dinosaurs to extinction 65 million years ago. Species of plants, animals, fungi, and microscopic organisms such as bacteria are being lost at such alarming rates that biologists estimate that three species go extinct every hour. Scientists around the world are cataloging and studying global biodiversity in hopes that they might better understand it, or at least slow the rate of loss.

Упражнение 6. Переведите письменно на английский язык следующий текст.

Биоразнообразие – сокращенное от «биологическое разнообразие» – означает разнообразие живых организмов во всех его проявлениях: от генов до биосферы. Вопросам изучения, использования и сохранения биоразнообразия стало уделяться большое внимание после подписания многими государствами Конвенции ООН о биологическом разнообразии в 1992 г. в Рио-де Жанейро.

Существует три основных типа биоразнообразия:

– генетическое разнообразие, отражающее внутривидовое разнообразие и обусловленное изменчивостью особей;

– видовое разнообразие, отражающее разнообразие живых организмов (растений, животных, грибов и микроорганизмов). В настоящее время описано около 1,7 миллиона видов, хотя их общее число, по не которым оценкам, составляет до 50 млн.;

– разнообразие экосистем охватывает различия между типами экосистем, разнообразием сред обитания и экологических процессов. Отмечают разнообразие экосистем не только по структурным и

функциональным составляющим, но и по масштабу – от микробиогеоценоза до биосферы.

Иногда в отдельную категорию выделяют разнообразие ландшафтов, отражающее особенности территориального устройства и влияние местных, региональных и национальных культур общества.

Все типы биологического разнообразия взаимосвязаны между собой: генетическое разнообразие обеспечивает разнообразие видов.

Разнообразие экосистем и ландшафтов создает условия для образования новых видов. Повышение видового разнообразия увеличивает общий генетический потенциал живых организмов биосферы. Каждый вид вносит свой вклад в разнообразие – с этой точки зрения не существует бесполезных и вредных видов.

Упражнение 7. Передайте устно на английском языке основное содержание текста упражнения 6.

Упражнение 8. Изучите следующие слова, словосочетания и предложения, переведите их на русский язык.

A. Describing animals and birds

word	*definition and/or examples*
Mammal	animal that gives birth to live babies, not eggs, and feeds them on its own milk (e.g. cat, cow, kangaroo)
Rodent	e.g. mouse, rat
Reptile	e.g. snake, lizard
Carnivore	animal that eats meat (e.g. lion, tiger)
Herbivore	animal that eats grass/vegetation (e.g. deer, cow)
Predator	animal that hunts/eats other animals (e.g. eagle, lion, shark)

B. Describing typical animal behavior

word	*meaning*	*example*
Docile	behaves very gently	Our old cat is a very docile creature.
Tame	not afraid of humans	These birds are so tame, they will sit on your hand.
Domesticated	lives with or is used by	Dogs and cats became

	humans	domesticated thousands of 1 years ago.
Wild	opposite of domesticated	There are wild cats in the mountains.
Savage	extremely violent or wild	A savage wolf killed three of the farmers sheep.
Fierce	behaves aggressively	A fierce-looking dog stood in the doorway.

C. Where animals and birds live

As more buildings and roads are constructed the **natural habitat** for these animals is shrinking.

Some wonderful animals can be seen if you visit the big game **reserves/game parks** in Africa. A **bird sanctuary** has recently been opened on the coast, ten miles south of here.

We went to the local **animal shelter** to ask if we could have a dog.

D. Human exploitation of animals and birds

Many people are opposed to **blood sports** such as foxhunting, cock fighting and bullfighting. Nowadays, a lot of people refuse to wear coats made of natural animal fur since they opposed to the **fur trade**.

Poachers kill hundreds of elephants every year to supply the **ivory trade**.

Animal rights activists often demonstrate outside this factory because animals are used experiments there.

Упражнение 9. Замените выделенные выражения в предложениях более формальными терминами из упражнения 8. Переведите преобразованные предложения на русский язык.

1. There are dozens of different types of **squirrels, mice and things like that** living in the woods.

2. A whale isn't a fish, it doesn't lay eggs. It's actually **an animal that gives birth directly**.

3. There are some interesting **turtles and crocodiles and that sort of thing** near the river.

4. Everyone thinks these animals **eat meat, but in fact they only feed on certain kinds of leaves**.

5. The mother bird protects her eggs from **animals that attack them**.

Упражнение 10. Заполните пропуски в предложениях, используя прилагательные из упражнения 8, чтобы описать спокойное или агрессивное поведение животных или отношения между животными и человеком. Переведите предложения на русский язык.

1. Sheep are generally rather …… animals, but the other day one attacked our dog.

2. The lions look very …….. / ……with their huge teeth and large heads.

3. Elephants are ……. in several countries in Asia, and they work hard carrying heavy weights.

4. The dolphins are very ……. and will swim along with human beings.

5. I don't think …….. birds should ever be hunted. They should be left in peace in their natural surroundings.

Упражнение 11. Прочитайте текст вслух, соотнесите описание животных и птиц с их названиями, одна позиция может быть использованы несколько раз.

Which bird or animal …		
is endangered by the loss of its natural *habitat*?	**1….. 2…..**	**A** Florida panther
has suffered from the effects of *pollution* on its food?	**3….. 4…..**	**B** Polar bear
is the victim of illegal *poarching*?	**5 …..**	**C** Asian snow leopard
was once killed for sport by hunters?	**6….. 7…..**	**D** Malaysian peacock pheasant
is unlikely to lose more of its habitat now?	**8…..**	
is now protected from harm by local people?	**9…..**	

may be saved if it can be *reintroduced* to its native habitat?	**10…..**	**E** Arabian oryx
cause problems for local people?	**11…..**	**F** Bali mynah
has been successfully reintroduced to its native habitat?		**G** Bird of paradise
eats the same food as local people?	**12…..**	
is in danger because of its high value?	**13…..**	
cannot give birth to young?	**14…..**	
	15…..	

Last chance to see…

The figures showing the rapid rate at which we are destroying the biodiversity around us are staggering. We are pushing a hundred species a day, four species an hour, into evolutionary oblivion. Some we know well - the elephant, the tiger, the rhino, the whooping crane. Most are plants, insects, microbes and reptiles we haven't even figured out names for.

How are we doing it? Simply by demanding more and more space for ourselves. In our assault on the ecosystems around us we have used a number of tools, from the spear and the gun to the bulldozer and the chainsaw.

And as we destroy and reshape habitat locally and globally we will in the end be our own victims. Not only will we be creating a soulless place, devoid of birdsong with ever-expanding vistas of plastic and concrete, but the biodiversity we need to protect our bodies and sustain our spirits is the one thing that we can never replace.

Endangerment is being caused not just in isolated habitats but almost everywhere, due to the effects of releasing agricultural and industrial chemicals into the eco-system. A small, isolated population of **Florida Panthers** clings to existence at the edge of the Everglades. Many are in poor shape, unable to reproduce. Theo Colborn of the World Wildlife Fund in Washington, points to the chemical run-off from Florida's massive agro-industry that ends up in the fish of the Glades feasted upon by the local racoon population. These racoons are the preferred dinner for the Florida Panther.

The prevailing winds blow agro-chemicals and airborne industrial pollution to the furthest reaches of the globe. The fragile Arctic ecosystem is far from sources of contamination, yet high levels of chemical residues are showing up in the fat of **Polar Bears** and other Arctic mammals. Colborn feels that their fish-based diets, shared by local Inuit people, account for increased reproductive abnormalities.

The New York Conservation Society not only runs all of New York's zoos, but is in the forefront of the struggle to preserve the beleaguered animals, birds and reptiles that are being crowded out of the world by human beings. Don Bruning, the Society's 'bird man', points to the plight of the Malaysian Peacock Pheasant as typical of many of the world's birds. "Most of its natural habitat in lowland Malaysia has been logged out and converted to oil-palm and rubber plantations. We hope that we can re-introduce captive birds into some of the few wildlife refuges that remain."

One of the birds that the Conservation Society has helped bring back from the brink is the **Bali Mynah**. But now the poaching of these birds has dropped their wild population from 50 back to a perilous 35. Park rangers make $15 to $20 a month, while a Bali Mynah sells for $500. Don Bruning says: "The economics just aren't there. What we need to ensure is that enough Bali Mynahs breed in captivity to swamp the market so it just isn't profitable to poach wild birds." This has already been done with a number of species, including the American Alligator.

The Society participated with several other zoos in the re-introduction into Oman of the **Arabian Oryx** - a small antelope whose habitat is some of the toughest terrain in the world. Jim Doherty, the Society's general curator, is quick to point out that only the support of local people keeps these antelopes out of the rifle sights of wealthy hunters who once slaughtered them.

The Society understands the mix of tactics needed to curb endangerment and the complexities involved. Outside the **Snow Leopard's** compound, a board gives the views of the different 'players' in the preservation of this shy and nomadic cat. A Western conservationist focuses on the uniqueness and beauty of the Leopard. A local Himalayan herder stresses he can ill afford to lose 25 per cent of his sheep and goats. The wife of a local ranger talks about the difficulty of punishing those found with skins - they might be old and predate the anti-hunting law, they might come from a cat already dead. How was one to know?

The first task of any successful conservation policy is to get the local people on your side. Bruning is particularly enthusiastic about the Society's project to save the habitat of the **Bird of Paradise** in Papua New Guinea. “We took 12 of the local leaders from a village in the centre of the bird's habitat and brought them down to the coast to visit two villages, one where logging rights had been sold and the area clearcut, the other where the forest had been protected.”

In the first village people told their visitors about the large amount of money they had received at the cost of their traditional forest livelihood. The money was now all gone. The other village never got the big payout but still had their forest, which they used to get a smaller but ongoing income from local eco-tourism. “The group had never seen what a clearcut looked like and they were devastated. These 12 people came back and discussed with all the local villages, and the first rule they came up with was that the area should never be logged. They are now looking at such things as local carving and handicrafts as well as butterfly farming. It gives them a stake in the forest and that's the key.”

Упражнение 12. Передайте по памяти содержание текста упражнения 11 как можно ближе к оригиналу сначала на русском языке, а затем на английском.

Упражнение 13. Переведите с листа на русский язык следующие отрывки, вставляя пропущенные слова.

A) The project, which seeks to ……. lion populations in Zimbabwe, is led by the Wildlife Conservation Research Unit, University of Oxford, working with the Zimbabwe wildlife department. Professor David Macdonald, director of Wild CRU, told BBC News Online: “People think lions are ……, but a survey to which we contributed came up with a very different picture. There may be as few as 20,000 lions left across Africa - a terrifyingly small number, and a ……one. The lions are killed by farmers, and by …… , and it's mainly males who die. The situation is …… by the fact that lions live in extremely complex societies. If you kill one male, the lion who replaces him will usually kill his …… . And we found males serving three, four or five ……of females, not just one. So the take is completely unsustainable because the consequences of one kill just cascade. We've managed to get the …… halved. Another project is trying to save the guanaco, an animal of the high Andes which is thought to be the ancestor of the llama. Other species to benefit include …… in Malaysia, …… penguins, and fruit bats in Madagascar.”

(prides, trophy hunters, plausible, South African, protect, cubs, hunting quota, complicated, common, orangutans)

B) The Sumatran orangutan and the Bornean orangutan are the only great.to live outside Africa. These solitary apes require a huge amount of …… to survive. The fruits that they live on are …… . The lowland forest …… they inhabit are disappearing to make way for agriculture and oil palm plantations by logging and fire. Less than 2% of the orangutan's original habitat remains. Sadly, even the national parks that should be safe …… are now reportedly being …… illegally. Consequently populations have declined by more than 90% in the past century. There are thought to be less than 30,000 individuals, a decline of 30-50% in the last decade. Unless they are con-served in well-managed and …… areas, in forests connected by corridors, they may well be facing extinction in the wild. Conservation organisations are trying to help orangutans by preserving sufficient habitat, but also by fighting the commercial and economic needs that result in forest ……. In addition, action is needed to stamp out a widespread trade in orangutans as …….

(well-protected, habitats, few and far between, pets, havens, logged, destruction, space, apes)

Упражнение 14. Ответьте на вопросы по содержанию текстов данного урока.

1. Why are so many species are in danger of extinction?

2. How can animals be saved from extinction?

3. Which people are the most important in the success or failure of a conservation policy?

4. What do we call sports that deliberately injure or kill animals for pleasure?

5. What name is given to the activity of buying and selling elephants' tusks?

6. What do we call people who illegally hunt or catch animals or fish?

7. What arguments would animal rights activists have against the fur trade?

Section 4. Biodiversity and Climate Change

Упражнение 1. Прослушайте текст, письменно фиксируя ключевую информацию.

Climate change and biodiversity-related conventions

In recent years, many climate change considerations have been included in the programmes, decisions, and recommendations of various conventions.

Here is how some conventions are considering the links between climate change and biodiversity:

At its eighth meeting, the Conference of the Parties to the Convention on Biological Diversity (CBD) highlighted the importance of integrating biodiversity considerations into all relevant national policies, programmes and plans, in response to climate change, and to rapidly develop tools for the implementation of biodiversity conservation activities that contribute to climate change adaptation. The Conference of the Parties also noted the need to identify mutually supportive activities to be conducted by the secretariats of the Rio conventions, Parties, and relevant organizations (decision VIII/30).

The United Nations Framework Convention on Climate Change (UNFCCC) has been signed by 191 Parties, which recognize the need to tackle climate change. The Convention's objective is to achieve stabilization of greenhouse gas concentrations at a level preventing dangerous anthropogenic interference with the climate system. It calls upon Parties to achieve that level in a time frame that allows ecosystems to adapt to climate change.

The United Nations Convention to Combat Desertification (UNCCD) emphasizes the need to coordinate desertification-related activities with the research efforts on climate change in order to find solutions to both problems.

In March 2006, the World Heritage Committee organized a meeting of experts at the UNESCO headquarters in Paris. An outcome of this meeting was the elaboration of a strategy to assist States Parties to implement appropriate management responses to climate change. At its 30th session, held in Vilnius (Lithuania) in July 2006, the World Heritage Committee requested "States Parties and all partners concerned to implement this strategy to protect the Outstanding Universal Value, integrity and authenticity of World Heritage sites from the adverse effects of Climate Change, to the extent possible and within the available resources" (Decision 30 COM7.1/8).

At its eighth meeting, the Conference of the Parties to the Convention on the Conservation of Migratory Species (CMS) requested their scientific council to afford climate change high priority in its future programme of activities and called on Parties to implement, as appropriate, adaptation measures.

The Conference of the Contracting Parties of the Ramsar Convention on Wetlands, at its eighth meeting, called upon Contracting Parties to manage wetlands so as to increase their resilience to climate change by promoting wetland and watershed protection and restoration (Resolution VIII.3). Its science and technical review Panel is reviewing the potential impacts of climate change on wetland ecosystems' ability to deliver services, and the role of wetlands in ameliorating the effects of climate change. The 10th COP to be held in 2008 will have a consideration of the linkages between climate change and wetlands.

Упражнение 2. Передайте текст упражнения 1 на русском языке, опираясь на свои записи. Попросите вашего коллегу перевести ваш пересказ на английский язык на слух по предложению без опоры на текст или его записи.

Упражнение 3. Ознакомьтесь самостоятельно со следующими международными организациями. Подберите русские эквиваленты к полным названиям данных организаций и их аббревиатурам. Переведите письменно на русский язык названия и описания этих организаций.

World Wide Fund for Nature (WWF)

The World Wide Fund for Nature (WWF) is an international non-governmental organisation founded in 1961, working in the field of the wilderness preservation, and the reduction of humanity's footprint on the environment. It was formerly named the World Wildlife Fund, which remains its official name in Canada and the United States.

It is the world's largest conservation organisation with over five million supporters worldwide, working in more than 100 countries, supporting around 1,300 conservation and environmental projects. WWF is a foundation, with 55% of funding from individuals and bequests, 19% from government sources (such as the World Bank, DFID, USAID) and 8% from corporations in 2014.

The group's mission is “to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with

nature.” Currently, much of its work concentrates on the conservation of three biomes that contain most of the world's biodiversity: oceans and coasts, forests, and freshwater ecosystems. Among other issues, it is also concerned with endangered species, sustainable production of commodities and climate change.

WWF's strategy for achieving its mission specifically concentrates on restoring populations of 36 species (species or species groups that are important for their ecosystem or to people, including elephants, tunas, whales, dolphins and porpoises), and ecological footprint in 6 areas (carbon emissions, cropland, grazing land, fishing, forestry and water).

The organisation also works on a number of global issues driving biodiversity loss and unsustainable use of natural resources, including finance, business practices, laws, and consumption choices. Local offices also work on national or regional issues.

WWF works with a large number of different groups to achieve its goals, including other NGOs, governments, business, investment banks, scientists, fishermen, farmers and local communities. It also undertakes public campaigns to influence decision makers, and seeks to educate people on how to live in a more environmentally friendly manner. It urges people to donate funds to protect the environment. The donors can also choose to receive gifts in return.

Greenpeace

Greenpeace is a non-governmental environmental organisation with offices in over 40 countries and with an international coordinating body in Amsterdam, the Netherlands. Founded by Canadian and US ex-pat environmental activists in 1971, Greenpeace states its goal is to “ensure the ability of the Earth to nurture life in all its diversity” and focuses its campaigning on worldwide issues such as climate change, deforestation, overfishing, commercial whaling, genetic engineering, and anti-nuclear issues. It uses direct action, lobbying, research, and ecotage to achieve its goals. The global organisation does not accept funding from governments, corporations, or political parties, relying on 2.9 million individual supporters and foundation grants. Greenpeace has a general consultative status with the United Nations Economic and Social Council and is a founding member of the INGO Accountability Charter; an international non-governmental organization that intends to foster accountability and transparency of non-governmental organisations.

Greenpeace is known for its direct actions and has been described as the most visible environmental organisation in the world. Greenpeace has raised environmental issues to public knowledge, and influenced both the private and the public sector. Greenpeace has also been a source of controversy; its motives and methods (some of the latter being illegal) have received criticism, including an open letter from more than 100 Nobel laureates urging Greenpeace to end its campaign against genetically modified organisms (GMOs).

United Nations (UN)

UN is an international organisation established by charter on October 24, 1945, with the purposes of maintaining international peace and security, developing friendly relations among nations on the principle of equal rights and self-determination, and encouraging international co-operation in solving international economic, social, cultural, and humanitarian problems. The United Nations' headquarters are now located at the UN Building in New York City.

The General Assembly includes representatives of all members of the UN. A nation may send up to five representatives but still has only one vote.

Decisions are reached either by majority or by two-thirds vote, depending upon the subject matter. The General Assembly works through the committee system and receives reports from the various councils. It is convened yearly or by special session when necessary.

The Security Council consists of 5 permanent members – United States, Russia, United Kingdom, France, and China - and 10 nonpermanent members. The council functions continuously and is mainly concerned with the maintenance of international security. The presidency is rotated among members each month. Nonpermanent members are chosen from groups and regions in the most equitable fashion possible. Nine votes (including those of all five permanent members) are sufficient to carry a Security Council decision, but any permanent member may exercise a veto over any substantive proposal. Any state, even if it is not a member of the United Nations, may bring a dispute to which it is a party to the notice of the Security Council.

The Secretariat is the administrative department of the UN, headed by the secretary-general, who functions in a position of political importance and is appointed for a five-year term by both the General Assembly and the Security Council. The Secretariat influences the work of the United Nations to a degree much greater than indicated in the UN Charter.

The United Nations Environment Programme (UNEP)

The United Nations Environment Programme (UNEP) is an agency of United Nations and coordinates its environmental activities, assisting developing countries in implementing environmentally sound policies and practices. It was founded by Maurice Strong, its first director, as a result of the United Nations Conference on the Human Environment (Stockholm Conference) in June 1972 and has its headquarters in the Gigiri neighbourhood of Nairobi, Kenya. UNEP also has six regional offices and various country offices.

UNEP has overall responsibility for environmental problems among United Nations agencies but talks on addressing global warming are overseen by the Bonn-based Secretariat of the United Nations Framework Convention on Climate Change. Its activities cover a wide range of issues regarding the atmosphere, marine and terrestrial ecosystems, environmental governance and green economy. It has played a significant role in developing international environmental conventions, promoting environmental science and information and illustrating the way those can be implemented in conjunction with policy, working on the development and implementation of policy with national governments, regional institutions in conjunction with environmental non-governmental organisations (NGOs). UNEP has also been active in funding and implementing environment related development projects.

UNEP has aided in the formulation of guidelines and treaties on issues such as the international trade in potentially harmful chemicals, trans boundary air pollution, and contamination of international waterways.

The World Meteorological Organisation (WMO)

The World Meteorological Organisation (WMO) is a specialized agency of the United Nations. It is the UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources.

WMO has a membership of 191 member states and territories, as of February 2014. The Convention of the World Meteorological Organisation was signed 11 October 1947 and established upon ratification on 23 March 1950. WMO became the specialised agency of the United Nations in 1951 for meteorology (weather and climate), operational hydrology and related

geophysical sciences. It originated from the International Meteorological Organization (IMO), which was founded in 1873.

The WMO and United Nations Environment Programme (UNEP) jointly created the Intergovernmental Panel on Climate Change (IPCC). It is also directly responsible for the creation of the Global Atmosphere Watch (GAW). The IPCC has received the Nobel Peace Prize in 2007 "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change."

WMO promotes cooperation in the establishment of networks for making meteorological, climatological, hydrological and geophysical observations, as well as the exchange, processing and standardization of related data, and assists technology transfer, training and research. It also fosters collaboration between the National Meteorological and Hydrological Services of its Members and furthers the application of meteorology to public weather services, agriculture, aviation, shipping, the environment, water issues and the mitigation of the impacts of natural disasters. WMO facilitates the free and unrestricted exchange of data and information, products and services in real- or near-real time on matters relating to safety and security of society, economic welfare and the protection of the environment. It contributes to policy formulation in these areas at national and international levels.

United Nations Educational, Scientific and Cultural Organisation (UNESCO)

UNESCO is a specialised agency of the United Nations created to contribute to world peace by promoting international collaboration in education, science, and culture. The activities of UNESCO are mainly facilitative; the organisation attempts to assist, support, and complement national efforts of member states in the elimination of illiteracy and the extension of free education and seeks to encourage free exchange of ideas and knowledge among peoples and nations of the world by providing clearinghouse and exchange services. The permanent headquarters of UNESCO are in Paris.

World Health Organisation (WHO)

WHO is a specialised agency of the United Nations established to promote international co-operation for improved health conditions. The objective of this organisation is the attainment by all people of the highest possible level of health which is defined as a state of complete physical, mental, and social well-

being and not merely the absence of disease or infirmity. The administrative headquarters of WHO are in Geneva.

Упражнение 4. Закройте учебник. Опишите письменно на русском языке функции международных организаций, приведенных в упражнении 3.

Упражнение 5. Выступите в качестве представителя одной из международных организаций из упражнения 3. Подготовьте трехминутное выступление на английском языке, направленное на установление более тесных контактов с Россией. Попросите вашего коллегу выступить в качестве вашего переводчика (работа в парах).

Упражнение 6. Прослушайте и заполните пробелы в предложениях.

Climate changes

1) British Isles: large part of _____ now classified as semi-arid.

2) Northern and central Europe: increased incidence of _____ .

3) Southeast Asia violent cyclones ruining _____ and _____ more frequently.

4) North America: _____ in spring.

Global warming

5) Rise in temperature of 0,5 degrees C over _____ .

6) Most recent Ice Age caused by fall of _____ .

7) Moisture in atmosphere has increased by _____ .

8) Additional moisture affects _____ .

9) Global warming thought to result from _____ .

Упражнение 7. Прослушайте текст упражнения 6 еще один раз и передайте по памяти его содержание как можно ближе к оригиналу сначала на русском языке, а затем на английском.

Упражнение 8. Проверьте следующие отрывки на наличие орфографических ошибок, исправьте их, если они есть. Переведите отрывки письменно на русский язык.

Weather hazards

High winds

In strong winds, never walk on narrow mountain ledges or peaks: you could easily get blown off by a guest. If it suddenly becomes windy, tuck your clothes into your trowsers; a flaping coat or jacket can catch the wind and throw you of balance. If the wind is very strong, lie flat on the ground.

Floods

Try to avoid camping close to a river. There is a posibility of heavy rain occurring up-river and flood water could come rushing down when you are asleep or away from the tent. If their is a flood warning, take food, drinking water and spare cloths, and make for high ground. If you are swept away by flood water, try to grab hold of a floatting object such as a log or a peace of wood. If it is big enough, clime on top and use it as a raft. Paddle to safety using your hands.

Avalanches

Avalanches are extremly dangerous and can happen very suddenly; they are especially likely to occur during a thaw and after a new fall of snow. Listen to the whether forcasts for your area and if there are any warnings of avalanches, don't go out walking or sking.

0 ∨
0 gust
1 …
2 …
3 …
4 …
5 …
6 …
7…
8 …
9 …
10 …
11 …
12 …
13 …
14 …
15 …
16 …

Упражнение 9. Прослушайте текст выступления В. Путина на Всемирной конференция по климату в Париже, 2015. Выступите в качестве переводчика-синхрониста.

Уважаемый господин Генеральный секретарь! Уважаемый господин Президент Олланд! Главы государств и правительств! Дамы и господа!

Рад возможности выступить на столь представительной конференции.

Конечно, изменение климата стало одним из самых серьёзных вызовов, с которыми сталкивается человечество. Вызванные глобальным потеплением ураганы, наводнения, засуха, другие аномальные явления наносят всё более ощутимый экономический ущерб, разрушают привычную, сложившуюся среду обитания человека. От решения климатической проблемы зависят качество жизни всех людей на планете, экономический рост и устойчивое социальное развитие целых регионов Земли.

Россия предпринимает активные шаги по решению проблемы глобального потепления. Наша страна вышла на одно из первых мест в мире по темпам снижения энергоёмкости экономики – 33,4 процента за период с 2000 по 2012 годы, а по итогам реализации программы «Энергоэффективность и развитие энергетики» рассчитываем добиться сокращения к 2020 году ещё на 13,5 процента.

Мы перевыполнили свои обязательства по Киотскому протоколу: с 1991 года по 2012 год Россия не только не допустила роста выбросов парниковых газов, но значительно их уменьшила. Благодаря этому в атмосферу не попало около 40 миллиардов тонн эквивалента углекислого газа. Для сравнения скажу, уважаемые коллеги, что выбросы парниковых газов всех стран мира в 2012 году составили 46 миллиардов тонн, то есть можно сказать, что усилия России позволили затормозить глобальное потепление почти на год.

С 1991 года по 2012 год Россия не только не допустила роста выбросов парниковых газов, но значительно их уменьшила. Это удалось за счёт модернизации экономики, внедрения экологически чистых и энергосберегающих технологий.

Заметно снизить парниковую эмиссию нам удалось за счёт модернизации экономики, внедрения экологически чистых и

энергосберегающих технологий, причём одновременно мы смогли практически удвоить ВВП страны за то же время. Хочу сказать этим, что вполне возможно уделять необходимое внимание развитию, обеспечивать развитие и заботиться о природе.

Считаем принципиально важным, чтобы новое климатическое соглашение основывалось на принципах Рамочной конвенции ООН об изменении климата и имело юридически обязывающий характер, а в его реализации участвовали и развитые, и развивающиеся экономики. Мы исходим из того, что оно должно быть всеобъемлющим, эффективным, равноправным. Поддерживаем долгосрочную цель нового соглашения – ограничить рост глобальной температуры к концу XXI века пределами в два градуса Цельсия.

Россия продолжит вносить вклад в совместные усилия по предотвращению глобального потепления. К 2030 году рассчитываем уменьшить выбросы парниковых газов до 70 процентов от базового уровня 1990 года. Будем добиваться этого в том числе за счёт прорывных решений в сфере энергосбережения, за счёт новых нанотехнологий. Например, Россией разработана технология использования добавок на основе углеродных нанотрубок. По оценкам экспертов, применение этой технологии только в России снизит эмиссию углекислого газа к 2030 году на 160–180 миллионов тонн. Конечно, мы готовы к взаимному обмену подобными разработками.

Далее. В новом соглашении должна быть зафиксирована важная роль лесов как основных поглотителей парниковых газов. Для России, которая обладает колоссальными лесными ресурсами и многое делает для сохранения «лёгких» планеты, это особенно важно.

К 2030 году рассчитываем уменьшить выбросы парниковых газов до 70 процентов от базового уровня 1990 года.

Принципиальное значение имеет поддержка усилий развивающихся государств по сокращению вредных выбросов. Россия также планирует оказывать финансовую и иную помощь этим странам, используя соответствующие механизмы Организации Объединённых Наций.

И ещё один важный момент. В своём выступлении на 70-й сессии Генеральной Ассамблеи ООН уже отмечал, что к климатической проблеме нужно подходить комплексно. В этой связи хотел бы подтвердить наше

предложение провести под эгидой ООН научный форум, в ходе которого обсудить проблемы, связанные не только с изменением климата, но и исчерпанием природных ресурсов, деградацией среды обитания человека.

Уважаемые дамы и господа! Рассчитываем, что совместными усилиями мы сможем добиться выработки нового климатического соглашения, которое придёт на смену Киотскому протоколу, будет служить интересам всех государств и народов после 2020 года.

Благодарю вас за внимание.

Упражнение 10. Прослушайте текст выступления Б. Обамы на Всемирной конференция по климату в Париже, 2015. Выступите в качестве переводчика-синхрониста.

President Hollande, Mr. Secretary General, fellow leaders. We have come to Paris to show our resolve.

We offer our condolences to the people of France for the barbaric attacks on this beautiful city. We stand united in solidarity not only to deliver justice to the terrorist network responsible for those attacks but to protect our people and uphold the enduring values that keep us strong and keep us free. And we salute the people of Paris for insisting this crucial conference go on -- an act of defiance that proves nothing will deter us from building the future we want for our children. What greater rejection of those who would tear down our world than marshaling our best efforts to save it?

Nearly 200 nations have assembled here this week -- a declaration that for all the challenges we face, the growing threat of climate change could define the contours of this century more dramatically than any other. What should give us hope that this is a turning point, that this is the moment we finally determined we would save our planet, is the fact that our nations share a sense of urgency about this challenge and a growing realization that it is within our power to do something about it.

Our understanding of the ways human beings disrupt the climate advances by the day. Fourteen of the fifteen warmest years on record have occurred since the year 2000 -- and 2015 is on pace to be the warmest year of all. No nation -- large or small, wealthy or poor -- is immune to what this means.

This summer, I saw the effects of climate change firsthand in our northernmost state, Alaska, where the sea is already swallowing villages and

eroding shorelines; where permafrost thaws and the tundra burns; where glaciers are melting at a pace unprecedented in modern times. And it was a preview of one possible future -- a glimpse of our children's fate if the climate keeps changing faster than our efforts to address it. Submerged countries. Abandoned cities. Fields that no longer grow. Political disruptions that trigger new conflict, and even more floods of desperate peoples seeking the sanctuary of nations not their own.

That future is not one of strong economies, nor is it one where fragile states can find their footing. That future is one that we have the power to change. Right here. Right now. But only if we rise to this moment. As one of America's governors has said, "We are the first generation to feel the impact of climate change, and the last generation that can do something about it."

I've come here personally, as the leader of the world's largest economy and the second-largest emitter, to say that the United States of America not only recognizes our role in creating this problem, we embrace our responsibility to do something about it.

Over the last seven years, we've made ambitious investments in clean energy, and ambitious reductions in our carbon emissions. We've multiplied wind power threefold, and solar power more than twenty fold, helping create parts of America where these clean power sources are finally cheaper than dirtier, conventional power. We've invested in energy efficiency in every way imaginable. We've said no to infrastructure that would pull high-carbon fossil fuels from the ground, and we've said yes to the first-ever set of national standards limiting the amount of carbon pollution our power plants can release into the sky.

The advances we've made have helped drive our economic output to all-time highs, and drive our carbon pollution to its lowest levels in nearly two decades.

But the good news is this is not an American trend alone. Last year, the global economy grew while global carbon emissions from burning fossil fuels stayed flat. And what this means can't be overstated. We have broken the old arguments for inaction. We have proved that strong economic growth and a safer environment no longer have to conflict with one another; they can work in concert with one another.

And that should give us hope. One of the enemies that we'll be fighting at this conference is cynicism, the notion we can't do anything about climate change. Our progress should give us hope during these two weeks - hope that is rooted in collective action.

Earlier this month in Dubai, after years of delay, the world agreed to work together to cut the super-pollutants known as HFCs. That's progress. Already, prior to Paris, more than 180 countries representing nearly 95 percent of global emissions have put forward their own climate targets. That is progress. For our part, America is on track to reach the emissions targets that I set six years ago in Copenhagen - we will reduce our carbon emissions in the range of 17 percent below 2005 levels by 2020. And that's why, last year, I set a new target: America will reduce our emissions 26 to 28 percent below 2005 levels within 10 years from now.

So our task here in Paris is to turn these achievements into an enduring framework for human progress - not a stopgap solution, but a long-term strategy that gives the world confidence in a low-carbon future.

Here, in Paris, let’s secure an agreement that builds in ambition, where progress paves the way for regularly updated targets - targets that are not set for each of us but by each of us, taking into account the differences that each nation is facing.

Here in Paris, let’s agree to a strong system of transparency that gives each of us the confidence that all of us are meeting our commitments. And let’s make sure that the countries who don’t yet have the full capacity to report on their targets receive the support that they need.

Here in Paris, let’s reaffirm our commitment that resources will be there for countries willing to do their part to skip the dirty phase of development. And I recognize this will not be easy. It will take a commitment to innovation and the capital to continue driving down the cost of clean energy. And that’s why, this afternoon, I’ll join many of you to announce an historic joint effort to accelerate public and private clean energy innovation on a global scale.

Here in Paris, let’s also make sure that these resources flow to the countries that need help preparing for the impacts of climate change that we can no longer avoid. We know the truth that many nations have contributed little to climate change but will be the first to feel its most destructive effects. For some, particularly island nations - whose leaders I’ll meet with tomorrow -

climate change is a threat to their very existence. And that's why today, in concert with other nations, America confirms our strong and ongoing commitment to the Least Developed Countries Fund. And tomorrow, we'll pledge new contributions to risk insurance initiatives that help vulnerable populations rebuild stronger after climate-related disasters.

And finally, here in Paris, let's show businesses and investors that the global economy is on a firm path towards a low-carbon future. If we put the right rules and incentives in place, we'll unleash the creative power of our best scientists and engineers and entrepreneurs to deploy clean energy technologies and the new jobs and new opportunities that they create all around the world. There are hundreds of billions of dollars ready to deploy to countries around the world if they get the signal that we mean business this time. Let's send that signal.

That's what we seek in these next two weeks. Not simply an agreement to roll back the pollution we put into our skies, but an agreement that helps us lift people from poverty without condemning the next generation to a planet that's beyond its capacity to repair. Here, in Paris, we can show the world what is possible when we come together, united in common effort and by a common purpose.

And let there be no doubt, the next generation is watching what we do. Just over a week ago, I was in Malaysia, where I held a town hall with young people, and the first question I received was from a young Indonesian woman. And it wasn't about terrorism, it wasn't about the economy, it wasn't about human rights. It was about climate change. And she asked whether I was optimistic about what we can achieve here in Paris, and what young people like her could do to help.

I want our actions to show her that we're listening. I want our actions to be big enough to draw on the talents of all our people - men and women, rich and poor - I want to show her passionate, idealistic young generation that we care about their future.

For I believe, in the words of Dr. Martin Luther King, Jr., that there is such a thing as being too late. And when it comes to climate change, that hour is almost upon us. But if we act here, if we act now, if we place our own short-term interests behind the air that our young people will breathe, and the food

that they will eat, and the water that they will drink, and the hopes and dreams that sustain their lives, then we won't be too late for them.

And, my fellow leaders, accepting this challenge will not reward us with moments of victory that are clear or quick. Our progress will be measured differently - in the suffering that is averted, and a planet that's preserved. And that's what's always made this so hard. Our generation may not even live to see the full realization of what we do here. But the knowledge that the next generation will be better off for what we do here - can we imagine a more worthy reward than that? Passing that on to our children and our grandchildren, so that when they look back and they see what we did here in Paris, they can take pride in our achievement.

Let that be the common purpose here in Paris. A world that is worthy of our children. A world that is marked not by conflict, but by cooperation; and not by human suffering, but by human progress. A world that's safer, and more prosperous, and more secure, and more free than the one that we inherited.

Let's get to work. Thank you very much.

Упражнение 11. Разделитесь на две группы, одна из которых будет представлять правительство России, а в состав другой группы войдут международные эксперты в области экологии. Организуйте переговоры на тему «Проблемы экологии в России и в мировом сообществе». Выделите двух переводчиков, которые будут по очереди осуществлять двухсторонний перевод и при необходимости помогать друг другу.

Упражнение 12. Переведите письменно следующий текст с английского языка на русский.

Fortunately, in the last few decades we have developed our scientific understanding of how climate change occurs, and the links between different elements in climate. We have also developed many techniques to determine past climate conditions over even longer periods. These help us to understand whether the measured rate of recent climate change is unusual, or has happened before. However, the problem is very complex, and there are still many. We start by considering some different ways in which climate might change. These include natural cycles, sudden changes from one stable state to another ("regime shifts"), and human ("anthropogenic") impacts. The most easily understood cycles are the shorter changes such as daily and seasonal cycles. These depend on well-known variations in the distribution of solar input that

are a function of the earth’s rotation and orbit. These processes are difficult to model because they depend on highly complex feedback mechanisms between solar input, the ocean, the atmosphere, the cryosphere (sea ice, ice sheets, and glaciers), and possibly also the role of the earth's terrestrial and aquatic flora and fauna (including humans).

Упражнение 13. Ответьте на вопросы по содержанию текстов данного урока.

1. Do you agree that climate change is synonymous with global warming? Why? Why not?

2. What causes climate change?

3. What is being done around the world? How can society regulate environmentally hazardous activity?

4. What are the main functions of organisations related to ecological problems and conservation?

Section 5. Environment and Conservation

Упражнение 1. Прочитайте текст вслух.

How to save the planet and humanity

by Phil B.

Let's face reality. The Earth is going to be the first planet terraformed. The human race is killing our planet by flooding land, sea, and air with pollution and by over use. Plants and animals are unable to adapt quickly enough to the changes in the environment that mankind is causing.

The Earth is becoming less capable of sustaining the world's population. Even humanity is at risk of becoming extinct because of the long term effects of global warming. Here are some recommendations of what has to be done to save both the planet and humanity.

Recycle everything! Instead of having our trash sent to landfills, everything that people consume and eventually throw out must be recycled. Therefore, we need recycling plants for batteries, electronics, organic (food and garden) wastes, medals, etc. in addition to recycling paper, plastic, glass, and aluminum.

Pollution Free Energy! Reducing energy utilization, such as energy efficient light bulbs, cars, and washing machines will not solve this problem; but only delay this problem from being solved as soon as possible.

Population Control. Right now, the Earth cannot sustain the existing human population indefinitely, and this is not including the current population growth. As a result, the world's resources are quickly dwindling without replacements. The only logical solution to this problem is population control.

Since the world cannot indefinitely support the entire human population, then the world's population needs to decrease to a level so that the planet can sustain both humanity and wildlife indefinitely.

Renewable Resources. Humanity is currently consuming more resources than the planet can renew, and this does not include non-renewable resources such as oil. Therefore, business will eventually have to convert to strictly self sustainable and renewable resources in the near future.

Environmental Protection. The human race is destroying vast regions of the planet, so much so that the planet's ability of supporting life is decreasing.

Throughout the world, forests and wild lands must no longer be allowed to be destroyed for human development, and this still may not be enough to support all wildlife. Land that has become infertile because of man's actions, such as strip mining and deforestation, must be revived by law. The world's oceans also need to be globally managed, since the world's fish population is suffering from overfishing. It is estimated that the world's oceans will no longer be commercially useful for fishing between 2030 and 2060. Even air pollution needs to be completely regulated until all air is clean and remains that way.

Manage Global Warming. Global warming is going to decimate the human civilization if left unchecked. Further actions must be necessary to either prevent or manage global warming. For instance, intentionally flood large portions of land to prevent the world's ocean from destroying coastal cities and farmland, redirect rivers to not deposit their water into the oceans but into lakes, valleys, canyons, aquifers, empty oil fields, and where ever else possible, use seawater to flood large sections of unused land, such as deserts.

These solutions will definitely have major consequences, but will not include the uncontrolled destruction of cities and countless lives.

Упражнение 2. Выпишите из текста упражнения 1 слова и выражения, представляющие трудности для перевода. Письменно подберите к ним русские эквиваленты.

Упражнение 3. Данные предложения представляют собой резюме текста упражнения 1, расположите их в логическом порядке.

1) The previous solutions above will help slow down global warming, but they will not prevent global warming.

2) Here are some recommendations of what has to be done to save both the planet and humanity.

3) Since the world cannot indefinitely support the entire human population, then the world's population needs to decrease to a level so that the planet can sustain both humanity and wildlife indefinitely.

4) Therefore, further actions must be necessary to either prevent or manage global warming.

5) Land that has become infertile because of man's actions, such as strip mining and deforestation, must be revived by law.

6) Instead of having our trash sent to landfills, everything that people consume and eventually throw out must be recycled.

7) Right now, the Earth cannot sustain the existing human population indefinitely, and this is not including the current population growth.

Упражнение 4. Переведите синхронно текст упражнения 1, опираясь на выписанные слова и словосочетания, на составленное резюме в упражнении 3, а также при необходимости на исходный текст.

Упражнение 5. Переведите с листа на русский язык следующий отрывок, обращая внимание на выделенные слова.

Threats and potential threats to the environment

Shrinking habitats[1] are a threat to both plants and animals, and **endangered species**[2] need legal protection if they are to survive. Meanwhile, **global warming**[3] will produce rising sea levels and **climatic changes**[4], and **carbon dioxide emissions**[5] from the burning of **fossil fuels**[6] are contributing to the **greenhouse effect**[7]. In addition, population growth **exerts severe pressure on**[8] **finite resources**[9], and the ecological **balance**[10] may be upset by uncontrolled **deforestation**[11]. **Demographic projections**[12] suggest the world population will grow before it begins to stabilise. **One of the worst case scenarios**[13] is that there will be no tropical forests left by the year 2050. Our only hope is that **pristine environments**[14] such as Antarctica can be protected from development and damage.

1 places where animals live and breed which are decreasing in size.

2 types of animals/plants which are in danger of no longer existing

3 steady rise in average world temperatures

4 changes in the weather/climate

5 carbon dioxide gas from factories, cars, etc.

6 coal, oil, etc.

7 warming of the Earth’s surface caused by pollution

8 formal: puts pressure on

9 limited resources

10 balance of natural relationships in the environment

11 destruction/clearing of forests

12 forecasts about the population

13 the possibilities for the future

14 perfectly clean/untouched/areas

Упражнение 6. Замените выделенные слова более формальными словами и выражениями из упражнения 5. Внесите любые другие поправки, чтобы образовать правильное предложение, переведите преобразованные предложения на русский язык.

1. **All that carbon-what's-it-called gas put out by** cars and factories is a major problem.

2. These flowers are **a type there's not many left of**, so it's illegal to pick them.

3. A lot of wild animals have to survive in **smaller and smaller areas where they can live**.

4. Most of Patagonia is a **completely spotless area that has never been touched**.

5. We have to look after **the things we use on this planet because they won't last forever**.

6. If **the cutting down of trees** continues, there will be no forest left 10 years from now.

7. Burning **coal and oil and stuff like that** causes a lot of pollution.

8. **The sea will get higher** if **this heating up of the world** continues.

9. Increasing population **puts really big pressure** on economic resources.

10. The way **things all balance one another in nature** is very delicate.

Упражнение 7. Посмотрите на эти газетные заголовки и переведите их, обращая внимание на выделенные фразы.

GOVERNING PARTY IN BID TO IMPROVE **GREEN CREDENTIALS***

*reputation for positive support of the environment

SUSTAINABLE DEVELOPMENT** THE ONLY ANSWER FOR EMERGING COUNTRIES, SAYS UN COMMISSION

**development of industry, etc. which does not threaten the environment or social and economic stability

PROPHETS OF DOOM AND GLOOM*** SHOULD LISTEN TO SCIENTIFIC EVIDENCE, SAYS PRIME MINISTER

***people who always make the most depressing or pessimistic forecasts for the future

PIECEMEAL CONSERVATION**** INEFFECTIVE – NATIONAL POLICY NEEDED, SAYS NEW REPORT

****carrying out conservation one bit at a time, with no overall plan

Упражнение 8. Исправьте ошибки в следующем отрывке и переведите его на русский язык.

Profits of boom and gloom are always saying that we are heading for an environmental catastrophe, and that unless we adopt a policy of **attainable** development we will cause irreparable damage to the planet. The worst **place scenery** is of a world choked by overpopulation, the greenhouse **affect** and traffic gridlock. Much of what is claimed is exaggerated, but politicians are influenced by such voices and are always trying to improve their green **potentials** in the eyes of the voters.

Упражнение 9. Вы услышите пять коротких отрывков, в которых люди говорят об их отношении к охране окружающей среды. К вопросам 1-10 выберите правильный вариант A, B или C.

1. What change has the first speaker made in her transport to work?

A She goes by public transport.

B. She drives, using lead-free petrol.

C She uses her bicycle.

2. What action did her children recently take?

A They went on an organized cycle ride.

B They planted some trees.

C They joined a fitness club.

3. The second speaker says his company's environmental practices

A are decided by the Marketing Director.

B play a relatively minor part in business.

C are advertised once a year.

4. The company's wood policies have been criticized by

A a business organization.

B environmental groups.

C the national press.

5. Why doesn't the third speaker recycle her household waste?

A It would take up too much time.

B Not enough other people do it.

C She always forgets to do it.

6. What does she think is the best way to help the environment?

A going on demonstations

B writing to politicians

C attending meetings

7. Which action does the fourth speaker think is the most important to stop?

A leaving windows open

B wasting paper

C using plastic cups

8. What system does he hope to introduce?

A new heating

B rewards for good ideas

C car-sharing

9. According to the fifth speaker, people tend to be most concerned about

A food packaging.

B air quality.

C water shortage.

10. Which of these areas of business has increased most?

A financial planning schemes

B environmentally-friendly building design

C organically grown food products

Упражнение 10. Прослушайте отрывки еще раз, фиксируя письменно ключевую информацию.

Helping the environment

1. Woman 1. It is depressing – but if you don't act, it's going to get worse. There's the bus, of course, but if I'm honest, I really don't want to double my time to get to work. If you have a car, you can opt for lead-free, but I thought if I'm going to do something, I may as well get a bit fitter at the same time, which is why I've wheeled out my old bike, and actually I do feel better about the whole thing. My kids think I look silly, and they laugh at my tree planting, but on the other hand they did go on that charity ride themselves last weekend, so I think really they're beginning to get into it too.

2. Man 1. I was brought in by the Marketing Director to concentrate on the environment, so it's my job to address all the issues, which is crucial in our business of selling furniture. It's become a fairly major aspect of the whole business over recent years, actually, and we put out an annual advert in the press to keep everyone up-to-date with our policies on wood. But it's getting things right with the suppliers that really matters, to be honest, much more than

the environmental organisations. Ironically, our real enemy in this has been the National Business Council – they've made life quite difficult at times.

3. Woman 2. Some people spend so much time on all this careful recycling of their rubbish, and I don't see the point. I mean, I'm aware of it, you, know, but, I reckon that if just a minority are doing it, then what's the point? There are better ways to get to the people that make decisions. Yeah, you can jump up and down at demonstrations, which is all very well, but you'll get more effect if you sit down and write a letter to your local politicians, you know? Then your view will somehow be represented in the meetings that count. Time is money these days, it's up to you to use it – that's the real conversation.

4. Man 2. I do feel a sense of responsibility about the environment, being in charge of this college. There really is a tremendous amount of waste here, and I'm not saying I'm innocent. Windows are open, but I guess you can't help that in the summer, and we get through a frightening amount of paper, which is inevitable in this business, but what really gets me is the way we just keep chucking perfectly re-usable cups in the bin. Why do we think plastic is disposable? It's not, and that actually matters more to me than installing an energy efficient heating system, or car-sharing, which only applies to half the workforce anyway. I would like to introduce a points system, rewarding smart new ideas for ways to save the environment.

5. Woman 3. Yes, I do think my job's interesting. It's important to research how green issues affect business and attitudes among people. Our surveys have shown that air pollution is at the top of most people's agenda, above the waste involved in the packaging we throw away every day, or, in some places, the drought scares, for example. Concern about the environment is changing everything, even the way buildings are designed. But in actual spending terms, it's natural, unprocessed foods that are the growth area, more even than these new ethical savings and investment schemes you see advertised.

Упражнение 11. Передайте тексты упражнения 10 на русском языке, опираясь на свои записи. Попросите вашего коллегу перевести ваш пересказ на английский язык на слух по предложению без опоры на текст или его записи.

Упражнение 12. Прочитайте вслух следующий текст, вставляя пропущенные слова. Переведите устно текст на русский язык.

Gladys, the African vet

Last year Gladys Kalema became the Ugandan Wildlife Service's (**0**) ... (and only) vet after (**1**) ... from the Royal Veterinary College in London. She was the first person to fill the (**2**) …for 30 years and, at the age of 26, easily the youngest.

If Gladys did nothing else, caring for the world's (**3**) …population of 650 mountain gorillas would (**4**) … justify her wages. Since the the 1970s gorillas have (**5**) … severely from war and poaching. Now for $ 150 each, tourists can be led through the forest and (**6**) … within five metres of a gorilla – no closer, for (**7**) … of transmitting diseases such as measles and flu.

The gorillas here make a small but viable population. (**8**) … in the national parks the usual animals, elephants, rhinos, giraffes, are either not there or present in (**9**) … numbers which are dangerously out of (**10**) … with the creatures around them. If Uganda stays calm, wildlife may in (**11**) … , return by itself. But Gladys believes the country cannot wait. Animals must be brought in to (**12**) … tourism and provide (**13**) … to expand her work.

Despite the difficulties, Gladys feels more useful and fulfilled than she would be anywhere else. 'At this moment, my friends from vet school are reading the best way to (**14**) … a cat or dog, and here am I planning to translocate elephants. In my small (**15**) I am part of the reconstruction and rehabilitation of my country.'

0	**A** top	**B** main	**C** first	**D** chief
1	**A** leaving	**B** qualifying	**C** graduating	**D** passing
2	**A** post	**B** occupation	**C** appointment	**D** career
3	**A** living	**B** surviving	**C** continuing	**D** lasting
4	**A** only	**B** alone	**C** just	**D** merely
5	**A** endured	**B** harmed	**C** suffered	**D** died
6	**A** come	**B** reach	**C** progress	**D** meet
7	**A** risk	**B** danger	**C** fright	**D** fear

8 **A** Somewhere	**B** Anywhere	**C** Nowhere	**D** Elsewhere
9 **A** slight	**B** little	**C** insignificant	**D** minor
10 **A** balance	**B** relation	**C** comparison	**D** equality
11 **A** term	**B** time	**C** ages	**D** years
12 **A** raise	**B** swell	**C** boost	**D** multiply
13 **A** figures	**B** savings	**C** accounts	**D** funds
14 **A** prescribe	**B** treat	**C** heal	**D** operate
15 **A** way	**B** manner	**C** method	**D** means

Упражнение 13. Переведите с листа на русский язык следующий текст, вставляя пропущенные предложения

National parks and nature reserves

One of the pioneering ideas of conservation was that of creation of national parks. ____(1)____. They are chosen for their outstanding natural beauty, as areas of scientific interest, or as forming part of a country's cultural heritage, and often also to provide facilities for public recreation.

The concept of creating national parks and nature reserves developed in the early 19th century in response to increasing industrialization which had begun to cause large scale damage or destruction to natural environments in western Europe and North America. ____(2)____. It was designated by the United States Congress in 1872. The term “national park”, however, was first used for the Royal National Park established in New South Wales, Australia, in 1879. The concept of national parks then spread to Canada and New Zealand.

____(3)____. Similar parks were created in Japan, Mexico, the former Soviet Union, Britain and France.

In addition to the original purposes of landscape conservation and public recreation many parks have been established to protect endangered species of animals or plants and to promote scientific research. They may therefore be seen as nature reserves, a term which refers to a variety of areas in which rare animals, plants, or whole environments are protected and studied. Hunting and other disruptive activities are limited or banned and public access is often strictly controlled or even forbidden. ____(4) ____.

Many national parks and nature reserves are affected by a conflict between the needs of conservation and recreation. Visitors may unintentionally destroy the landscapes or interfere with the flora and fauna that the parks were created to protect. ____(5)____. Designated trails or roads have been created, as in several African national parks, and guided tours made compulsory, as in some national parks in India.

The designation of national parks and nature reserves can also conflict with other possible uses for the land and resources, especially in the relatively remote, sparsely populated, and politically unimportant areas which tend to be most suitable for conservation. Some conservation areas may be threatened by commercial exploitation of their minerals or trees. ____(6)____.

The conservation of such areas of natural beauty, cultural heritage, or scientific interest is especially problematic in developing countries where, in contrast to those industrialized nations which were the first to establish national parks and nature reserves, governments and pressure groups often find that proposals to impose limits on further development are too costly or unpopular. ____(7)____.

A. The first national park in Europe was designated in Sweden.

B. These areas may be inside national parks - for example, the Kanha Tiger Reserve in Kanha National Park, northern India - and in general they are smaller than most national parks.

C. In parks where mining, electricity generation, or other large scale activities are permitted, they are carefully and expensively monitored to minimize pollution and degradation of the landscape.

D. National parks and nature reserves in developing countries are supported and sponsored by international organisations, like UNESCO.

E. In response to this threat, parts of several American national parks have been closed to the public and a limit placed on the number of visitors permitted to enter certain fragile areas.

F. Yellowstone National Park, covering parts of Montana, Wyoming, and Idaho, is regarded as the first national park in the world.

G. National parks and nature reserves are areas selected by governments or private organizations for special protection against damage or degradation.

Упражнение 14. Ответьте на вопросы по содержанию текстов данного урока.

1. Are we really changing the Earth’s environment? Why?

2. What can be done to help save the Earth's environment?

3. Can the ecological problems be solved on a local scale?

4. Can nature protection be an effective substitute for national conflicts?

5. When and why did the concept of creating national parks and nature reserves develop?

6. What criteria are used when selecting an area as a national park or a nature reserve?

7. Why is the conservation issue problematic in the developing countries?

Section 6. Waste Management

Упражнение 1. Переведите на слух на русский язык по абзацам следующий текст.

As natural part of the life cycle, waste occurs when any organism returns substances to the environment. No society has been immune from the day-to-day problems associated with waste disposal. Communities use a variety of methods to manage wastes depending on the type of waste involved. The methods used include landfills, incineration, and composting, with separation of usable materials for recycling, especially for incineration. Landfills remain the primary place where waste goes, but incineration, recycling, composting, source reduction are all part of a comprehensive waste management program. Wastes come from residential, commercial, and industrial sources. Industrial wastes result from manufacturing and can be either hazardous or non-hazardous in nearly any form.

The trend among communities in the United States is to take an integrated approach to disposing of municipal wastes. Almost every community has some type of recycling program and encourage citizens to practice the three Rs, i.e. reduce, reuse, and then recycle to minimize the amount of waste generated.

The three “chasing arrows” called the Mobius are a symbol for recycling. The arrows represent collection, processing, and usage of materials. American products bearing the symbol are supposed to have been made from recycled materials. Plastic materials often have numbers inside of the Mobius to indicate whether or not the plastic is recyclable or not. According to the governmental estimates, in 2001, 28% of municipal solid waste had been recycled or composted, about three times as much as was recycled in 1990.

According to estimates by the U.S. Environmental Protection Agency, in 2000 Americans disposed of about 232 million tons of municipal solid waste. Of this, about 55% was put in landfills, another 30 % was recycled or composted, and 15 % burned. Although waste management in the United States is decentralized and diverse, regulations are enforced by the Environ-mental Protection Agency and similar agencies at the state and local levels.

A very important component of minimizing waste is source reduction. Manufacturers are making products lighter, using fewer materials, and packaging them more efficiently. Most household goods and appliances were made with pounds of steel and metals three decades ago. Now lightweight

plastics and other materials have made these goods smaller and lighter. The amount of pack-aging used has also decreased. Think of the large, bulky cardboard boxes used only a few years ago for compact discs, designed to discourage theft. Now, technology has replaced those bulky boxes with a magnetized strip that serves the same purpose. Technology, and particularly, green design are reducing the amount of materials that have to be disposed.

Упражнение 2. Подберите из текста упражнения 1 английские эквиваленты к следующим словосочетаниям.

1)утилизация отходов; 2)свалки; 3)сжигание; 4)компостирование; 5)переработка отходов; 6)уменьшение объема отходов; 7)комплексная программа управления отходами; 8)жилые, коммерческие и промышленные источники; 9)муниципальные твердые отходы; 10)бытовые товары и приборы; 11)сталь; 12)металлы; 13)легкие пластмассы; 14)громоздкие картонные коробки; 15)намагниченная полоса; 16)зеленый дизайн; 17)быть утилизированным.

Упражнение 3. Подберите из текста упражнения 1 слова и выражения к следующим определениям и переведите их на русский язык.

1) an adjective meaning “domestic”;

2) an adjective meaning “of less than average weight”;

3) a noun meaning “the act of getting rid of something, removal”;

4) a noun meaning “articles for sale”;

5) an adjective meaning “containing risks or danger”;

6) a noun meaning “burning unwanted things”;

7) a verb meaning “to prevent or try to prevent something”;

8) an adjective meaning “happening as a regular part of life”.

Упражнение 4. Переведите с листа на русский язык следующий отрывок, вставляя пропущенные слова.

There is an emerging field which seeks to rethink waste and to ……. industrial processes in ways that more closely mimic natural process. In natural ecosystems, one organism's waste becomes ……. for another organism. Research in this field looks at how ……. waste of materials and energy and

reduce emissions by analyzing all points of the product ……. from extraction of minerals and other resources to the manufacturing process through use and final disposition of the product as waste. This includes substituting less toxic materials in manufacturing, finding ways to reuse those materials in another process, reducing the amount of materials used, and designing products so they can be ……. after use. This type of systematic reduction of the environmental ……. of manufacturing and use of products is called "green design."

One example of the research in ……. ecology is a small industrial park in Kalundbord, Denmark, where a group of companies have developed a ……. relationship in which the companies exchange materials flows. Treated wastewater from an oil ……. is used by a power station for cooling. Several companies buy the waste steam generated by the power station, which is also used for household heating and to warm a local fish farm. Fly ash generated by the power station is used to make ……. . Residue from a pharmaceutical plant is treated and reused as ……. for local farms.

(redesign, industrial, symbiotic, fertilizer, burden, to reduce, refinery, cement lifecycle, recycled, food)

Упражнение 5. Переведите на слух на английский язык следующие предложения.

1. Создание эффективной системы управления обращением твердыми бытовыми отходами, т.е. сокращение количества свалок, а также выбросов в атмосферу, предполагает создание замкнутого цикла от момента создания до момента утилизации, охватывая всех участников процесса обращения твердых бытовых отходов.

2. Ограниченная площадь свободной земли, ее дороговизна, законы и система отслеживания правонарушений привели к формированию взгляда на отходы как на ресурсы, которые необходимо использовать как сырье, а их захоронение самым нерациональным методом.

3. Для стимулирования и поощрения инвестиций в переработку во многих странах приняты соответствующие нормативные акты, начиная от налогов на продукцию, заканчивая системой ответственности производителей.

4. Система управления отходами – это совокупность принципов, методов, средств и форм управления потоками отходов с целью

повышения эффективности их удаления, обезвреживания и переработки с одновременным снижением затрат, а также с целью уменьшения неблагоприятного воздействия на окружающую среду.

5. Существующая в настоящее время во многих городах система работы с отходами охватывает не все потоки образующихся отходов, наблюдаются сложности в управлении и финансировании, что повышает актуальность вопроса о ее реорганизации или внедрения инноваций в области управления.

Упражнение 6. Переведите с листа на русский язык следующий текст, вставляя пропущенные предложения.

Cell phone waste

According to some estimates, Americans discard about 130 million cellular telephones a year, and that means 65,000 tons of trash, including toxic metals and other health hazards. ____(1)_____. But the growth in cell phone use has been so rapid and enormous that the environmental and public health impacts of the waste they create are a significant concern.

There are more than 135 million people now registered as users of cell phones and the number is growing. On average a cellular telephone is kept only 18 months and in many cases thrown into a closet or drawer and finally discarded with the household garbage. The industry has collected more than a million used phones and wants to expand its recycling and "donate-a-phone" programs in which private groups collect phones and give proceeds to charity.

___(2)____ . By 2006, there will be at least 210 million cell phones in use across the country and another 500 million older phones may be stockpiled in drawers, closets and elsewhere, waiting to be thrown away.

Cell phones and other electronic devices, such as pagers, pocket PCs and music CD players are an especially problematic component of the waste stream because they contain a large number of hazardous substances, which can pollute the air when burned in incinerators and leach into soil and drinking water when buried in landfills. Many of these toxic substances — including arsenic, beryllium, cadmium, copper, lead, nickel, and zinc — belong to a class of chemicals known as persistent bio accumulative toxins (PBTS), which linger in the environment for long periods without breaking down. Some of them — including the metals lead and cadmium — also tend to accumulate in the tissues

of plants and animals, building up in the food chain to dangerous levels even when released in very small quantities. ____(3)_____.

____(4)_____. Until recently the most commonly used power source in cell phones was nickel-cadmium batteries (Ni-Cds). ____(5)____. Lithium-ion and nickel-metal hydride batteries are increasingly replacing Ni-Cds in cell phones, but these contain cobalt, zinc, and copper — all heavy metals that can be toxic to plants, wildlife, and human beings.

The industry, while interested in recycling, opposes efforts to develop a single phone standard. _____(6)____. A number of states including California, Massachusetts and Minnesota are considering legislation that would make manufacturers pay the cost of managing the waste from electronic products, including cell phones. Internationally, Australia has implemented a nationwide cell phone recycling program and the European Union is considering actions to make manufacturers responsible for electronic product wastes. The industry should expand measures to reduce the amount of cell phones that are thrown away by developing more "take-back" programs so phones and batteries can be recycled and adopt industry-wide technical and design standards so phones are not thrown away after a user switches services.

a. The wireless industry was built on competition between carriers and between standards.

b. The rechargeable batteries that power cell phones also contain a number of highly toxic substances.

c. Because these devices are so small, their environmental impacts might appear to be minimal.

d. These toxins have been associated with cancer and neurological disoders, especially in children.

e. Many of the phones taken back are resold in developing countries.

f. Cadmium is known to cause lung, liver, and kidney damage and is toxic to wildlife.

Упражнение 7. Подберите из текста упражнения 6 слова и выражения к следующим определениям и переведите их на русский язык.

1) a verb meaning “reject as unwanted; remove or put aside”;

2) a participle II meaning “accumulated a store of goods”;

3) a noun meaning “furnace or device for burning to ashes”;

4) a verb meaning “make (a liquid) percolate through some material”;

5) a noun meaning “waste material etc. used to landscape or reclaim land”;

6) a verb meaning “put (a decision, plan, contract, etc.) into effect”.

Упражнение 8. Переведите устно на русский язык следующий текст.

В состав современного телефона входит: пластик (45%); медь (20%); другие металлы (20%); керамика (10%); другие материалы (5%). Такие металлы, как свинец, литий, хром, входящие в состав микросхем и батареи телефона, могут наносить существенный вред экологии. Попадая в окружающую среду даже в небольшом количестве, они отравляют почву, грунтовые воды и воздух, а это представляет серьезную опасность для здоровья человека.

При этом 70-80 % материалов, входящих в состав телефона, можно отправить на переработку — это черные и цветные металлы, которые подходят как вторичное сырье для производства, и пластик. Из старого мобильного можно извлечь и некоторое количество лома драгоценных металлов — золота и серебра.

К сожалению, сегодня сдает свои телефоны на утилизацию лишь 3% населения. Большинство людей даже не подозревает, насколько вредно для окружающей среды просто выбрасывать отслуживший мобильный в мусорное ведро.

Кодексом об административных правонарушениях предусмотрено взыскание для тех, кто отправляет отработавшую технику, в том числе и мобильные телефоны, на свалку, поскольку такие устройства надлежит утилизировать особым образом как представляющие потенциальную опасность.

Собственно утилизация мобильных телефонов — трудоемкий процесс, требующий проведения целого комплекса процедур. Просто разобрать аппараты недостаточно, необходимо соблюдение определенных правил и мер безопасности. Провести грамотную утилизацию могут

только компании, где работа по этому направлению налажена на высоком профессиональном уровне.

Упражнение 9. Переведите письменно на русский язык следующий текст после его однократного прослушивания. По ходу чтения текста преподавателем постарайтесь не делать никаких записей или пометок.

The introduction and implementation of new, revolutionary energy sources will change the course of man everywhere on the planet. This power source will rank with fire, the wheel, and the internal combustion engine as a shaper of man‟s destiny. Every industry on earth will change, and eventually every person on earth will be affected. There will be no more air pollution from internal combustion engines. Many urban areas will be given a new lease on their environmental lives because these energy sources are absolutely non-polluting. The air will be clean again, because most air pollution comes from burning fossil fuel. Oil business will be relegated to the supply needed to manufacture plastics, lubricants, and hydraulic fluid. There will be no more nuclear power sources needed for submarine or electrical generation, and a huge hazardous waste disposal dilemma will become manageable.

Упражнение 10. Ознакомьтесь со следующими английскими устойчивыми полилексемными образованиями. Самостоятельно подберите их русские эквиваленты. Выучите их наизусть.

Thank you for the invitation to talk to you ...

The title of my talk is ...

My preference would have been to talk about...

I have to devote the bulk of my talk to ...

My defence for getting into the fight is ...

I hope there will be time at the end to discuss the far more important issues of...

In the very unlikely event that you haven't heard of us, let me just say that...

And for the few among you who may not heard of [smb] he is a noted

Let me begin with critique of...

What is probably true is that...

One criticism is that...

The critics find the allegation that...

The critics say that...

[Smb] deserves his share of the blame, but so do many others.

As [smb] noted in his review, ...

Let me shift to a more positive tone and acknowledge the validity of some of the criticisms ...

As I noted earlier, [smth] has two main tasks.

It's useful to recall a bit of history first.

There is no denying that...

But while characterisation of ... is broadly correct, it is inaccurate in many important details.

We were surprised by ...

The experience revealed ...

Our most glaring error, according to many observers, was to ...

There is another, more technical, debate about which there is still no meeting of the minds between ...

This debate has to do with ...

Others have taken similar positions.

The experience of... suggests that...

With respect to our other main task ...

As promised, let me finish with a brief discussion of...

Упражнение 11. Разделитесь на две группы, одна из которых будет состоять из российских экологов, а другая - из британских и американских. Сравните перспективы развития утилизации промышленных отходов. Подготовьте в группах аргументированное

пятиминутное выступление в защиту «своего» направления (одна группа на русском, а другая - на английском языке) и перевод своего выступления (на английский и русский языки соответственно). Выделите в составе каждой группы двух человек, один из которых выступит с подготовленным сообщением, а другой - представит его перевод. После презентации сообщений организуйте неформальную дискуссию относительно будущего информационных технологий. Выделите двух переводчиков, которые будут по очереди осуществлять двухсторонний перевод и при необходимости помогать друг другу.

Упражнение 12.Ответьте на вопросы по содержанию текстов данного урока.

1. When does waste occur? What sources do wastes come from?

2. What methods do communities use to manage wastes?

3. What is meant by the integrated approach to disposing of municipal waste?

4. How do manufacturers minimize waste?

5. How much trash do 130 million cell phones produce?

6. What happens to a cell phone after usage?

7. What chemicals are known as persistent bio-accumulative toxins? Why are they called this way?

8. Why does the industry oppose efforts to develop a single phone standard?

9. What measures are to be taken to reduce the amount of cell phones that are thrown away?

Glossary

absorber of greenhouse gases - поглотители парниковых газов

abundance – 1) обилие, изобилие, большое количество;
2) численность, относительное содержание (число особей на единицу пространства)

agriculture –сельское хозяйство

air classifier-воздушный классификатор, пневмоклассификатор

air current – воздушная струя; воздушный поток

air pollution network –сеть контроля загрязнения атмосферы

benthic (= benthonic) – бентический, бентосный, обитающий на дне

biocenosis – биоценоз

biodiversity – биоразнообразие

biometry— биометрия

BOD (Biochemical Oxygen Demand) – биохимическая потребность в кислороде

canalization –выправление рек, канализация

cap setting - установление предельных выбросов

carbon dioxide gas - углекислый газ

carbon emissions - выбросы углеродов

carbon nanotube - углеродные нанотрубки

carbon pollution - выброс продуктов углерода

cell – клетка

cellular respiration – клеточное дыхание

clean energy - чистая энергия

climate – климат

climate change – изменение климата

concrete water treatment - обработка водой

conventional power – традиционная энергия

conversationalist – специалист по охране природы и рациональному ис-пользованию природных ресурсов

crude oil – сырая нефть

destroy wildlife – разрушать живую природу

drought – засуха

dry haze – сухой туман

ecology – экология

ecosystem – экосистема

efficient use of natural resources – рациональное использование природных ресурсов

energy consumption - энергоёмкость

energy efficiency – энергоэффективность

energy-saving technology - энергосберегающие технологии

environment - среду обитания

environment related activity – природоохранная экологическая деятельность

environmental bank – экологический банк, занимающийся финансовой деятельностью, относящейся к природоохранным инвестициям

environmentalist – специалист по охране окружающей среды

environmentally friendly - экологически чистый

enzyme poison – ферментный яд

extreme weather phenomena - аномальные явления

field cover – травяной покров

field setting – высадка в открытый грунт

flood - наводнения

freshwater fauna – пресноводная фауна

fungi – грибы

global warming - глобальное потепление

greenhouse gas - парниковый газ

ground - грунт, земля, почва

guidance on water conservation – правила охраны вод

hailstorm - гроза или ливень с градом

harmful emissions - вредные выбросы

hereditary hazard – генетическая опасность

host-plant – растение-хозяин

human habitat - обитание человека

hurrican – ураганы

impact of climate change - воздействие изменения климата

industrial metabolism – промышленный метаболизм

industrial pollution fund – фонд борьбы с промышленным загрязнением

industrial – промышленный, производственный

job safety – охрана труда

land shaping - планировка земель

law enforcement agency – контроль в области охраны окружающей среды

lentic – стоячий (о воде)

low-carbon – низкоуглеродный

mammal – млекопитающее

membrane water proofing - гидроизоляция при помощи мембраны

nature – природа

natural habitat – естественная среда обитания

natural resources - природные ресурсы

nutrient – питательное вещество

oil separation – отделение нефти; blood poisoning - заражение крови; weed destruction – уничтожение сорняков

oilspot – нефтяное пятно

pedology – почвоведение

phosphorus – фосфор

photic zone – световая зона (толщи воды)

pipeline – трубопровод

plague – 1) эпидемическое заболевание с большой смертностью; 2) чума; 3) вспышка массового размножения вредных животных

pollination – опыление

predation (= predatism) – хищничество

public environmental awareness – информированность общественности об экологических проблемах

pull high-carbon fossil fuels - полезные ископаемые (или топливо) с высоким содержанием углерода

rainforest – тропический лес; влажные джунгли

reservoir – резервуар, вместилище, водохранилище, водоём

sampling –отбор проб

sandstorm - песчаная буря в пустыне, самум

shape of bottom – рельеф дна

shoreline – побережье

sinkhole - воронка просасывания

snowstorm - метель, буран, снежная буря, вьюга

soil fatigue – истощение почвы

solar insolation – освещение (предмета) лучами солнца

solar power – солнечная энергия

submerged countries - погруженные в воду страны

sustainable – экологически рациональный; способный существовать, не нанося ущерба окружающей среде; «устойчивый»

terrestrial life – флора и фауна суши

thunderstorm – гроза

underflow - подрусловый поток, подрусловые воды

underflow –подрусловые воды

waterway - водный путь

wind power – сила ветра

windfall – ветровал

wind-resistance – ветроустойчивость

References

1. Бобылёва С.В. Английский язык для экологов и биотехнологов: Учебное пособие / С.В. Бобылёва, Д.Н. Жаткин. – 4-е изд., стер. – М. : ФЛИНТА, 2014. – 192 с.

2. Высочина О.В., Черникова С.Н. World around us. Environmental Problems: Учебное пособие по английскому языку / О.В. Высочина, С.Н. Черникова. — Воронеж: Изд-во ВГУ, 2006. — 65 с.

3. Гайнуллина Р.Г. English for Ecologists: Учебно-методическое пособие по английскому языку / Р.Г.Гайнуллина, Э.А.Иванова, О.В.Степанова, Р.Г.Шишкина. Ижевск: Изд-во «Удмуртский университет», 2011. - 108 с.

4. Малашенко Е.А. English for ecologists. Английский язык для экологов: Учебно-методическое пособие / Е. А. Малашенко [и др.]; под ред. Е. А. Малашенко. – Минск : МГЭУ им. А.Д.Сахарова, 2012. – 116 с.

5. Миньяр-Белоручева А.П., Миньяр-Белоручев К.В. Английский язык. Учебник устного перевода: Учебник для вузов / А.П. Миньяр-Белоручева, К.В. Миньяр-Белоручев. — М.: Издательство «Экзамен», 2003. — 352 с.

6. Шишова В. А. Окружающая среда : Учебное пособие / В. А. Шишова, Е. С. Закиева. – Красноярск: Сибирский федеральный университет, 2010. – 52 с.

7. McCarthy M., O'Dell F. English Vocabulary in Use: Advanced. Cambridge, 2005. – 166 p.

8. O'Connell, S. Focus on Advanced English CAE Practice Tests with Guidance. - Longman, 1999. – 146 p.

9. O'Connell S. Focus on Advanced English CAE Students Book. Longman, 1999. – 242 p.

10. O'Dell, F., McCarthy, M. English Collocations in Use. Advanced. Cambridge University Press. 2011.- 188 p.

Dictionaries and reference books

1. Новый большой англо-русский словарь / под ред. Ю. Д. Апресяна - М.: Русский язык, 2000.

2. Longman Dictionary of Contemporary English (New Edition) - Longman, 2000.

3. Cambridge International Dictionary of English. – Cambridge: Cambridge University Press, 2000. – 1298 p.

4. Macmillan Dictionary for Advanced Learners. International Student Edition. - Macmillan Publishers Limited, 2003. – 989 p.

Internet Sources

1. Cambridge English [Электронный ресурс] // Режим доступа: http://www.cambridge.org/, дата обращения 27.01.17.

2. Encyclopedia.com [Электронный ресурс] // Режим доступа: http://www.encyclopedia.com/topic/ English_literature.aspx, дата обращения 08.02.17.

3. Ecology and Environment Glossaries [Электронный ресурс] // Режим доступа: http://inboxtranslation.com/resources/glossaries/ecology-environment/, дата обращения 11.02.17.

4. Free ecology dictionary [Электронный ресурс] // Режим доступа: http://www.ecologydictionary.org/, дата обращения 29.01.17.

5. Изменение климата: угроза биоразнообразию [Электронный ресурс] // Режим доступа: http://www.biodiversity.ru/programs/climate_and_biodiversity/pub/biodiversity_and_climate.pdf, дата обращения 01.02.17.

6. Biodiversity and Climate Change • International Day for Biological Diversity • Convention on Biological Diversity [Электронный ресурс] // Режим доступа: https://www.cbd.int/doc/bioday/2007/ibd-2007-booklet-01-en.pdf дата обращения 01.02.17.

Notes